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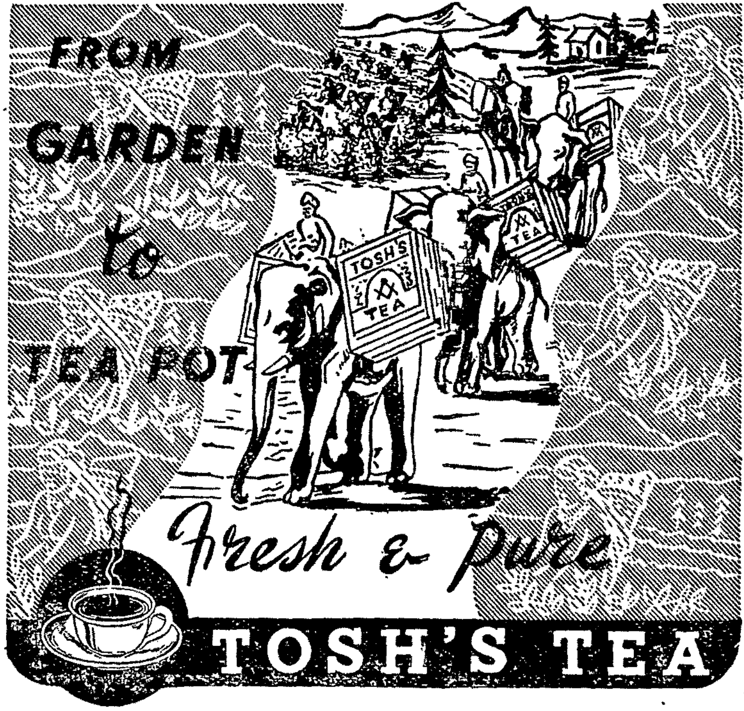

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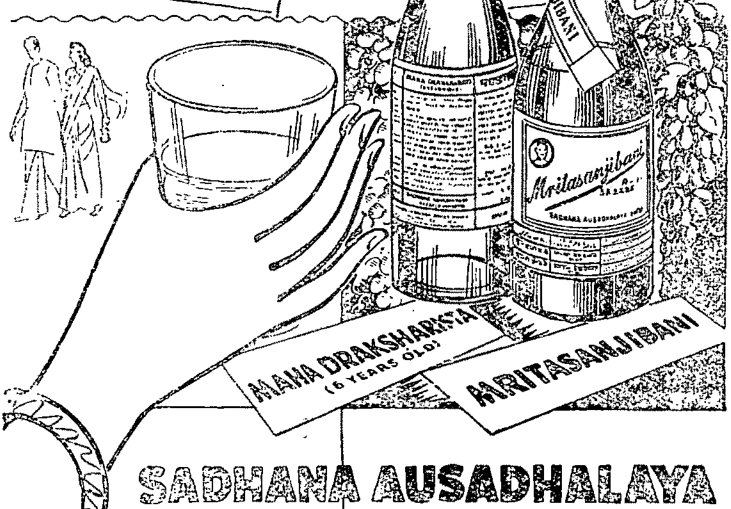

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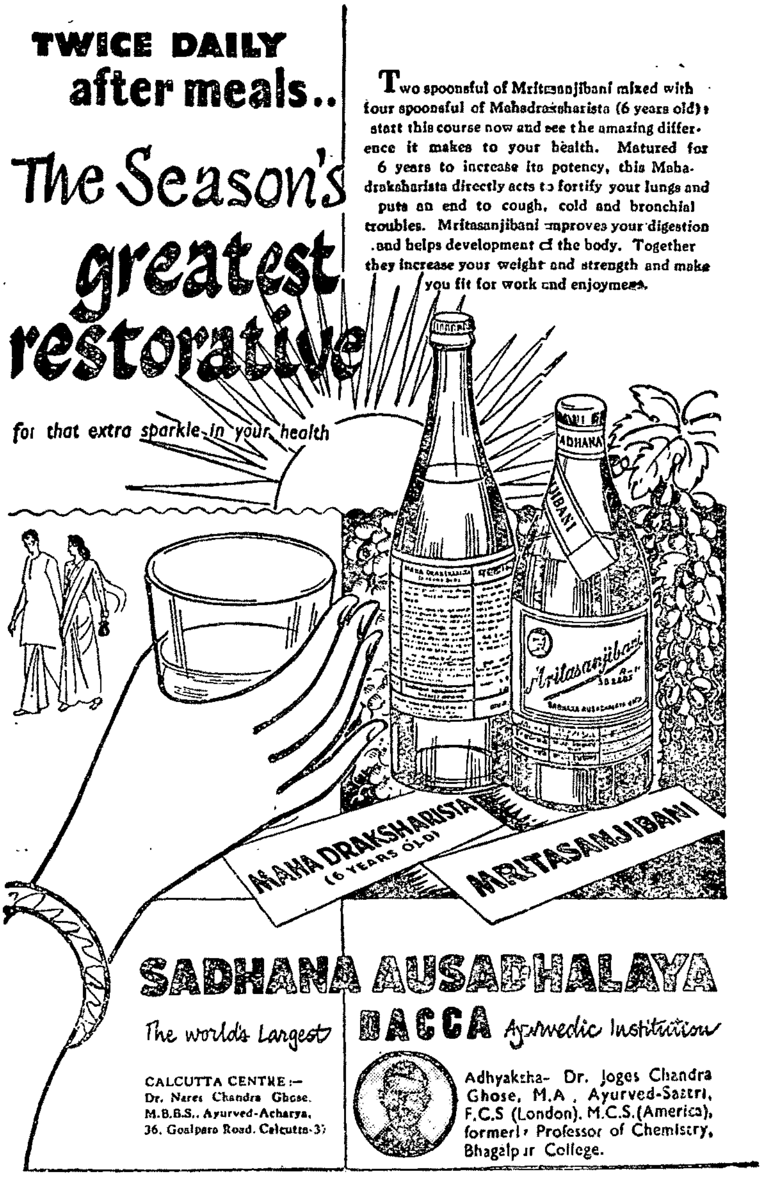
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THE CREATIVE MOOD: A STUDY OF DEJECTION: AN ODE.

DR. P. S. SASTRI
University, Saugor (M.P.)

1. The mood for dejection has been a unique feature in the life and poetry of Coleridge. The particular variety that becomes more pronounced in *Dejection : An Ode.* by April, 1802 appears to originate three years earlier in connection with his own wife. While Coleridge was away in Germany, the smallpox of Berkeley led his wife Sarah to leave for Bristol. This boy died on Feb. 10, 1799. She was deeply attached to the boy and his death began to freeze her warmth towards her husband. This was further accentuated by her stay with Southey who had no deep liking for Coleridge. The atmosphere was well prepared for cherishing an indifferent attitude. Later, after his return, we are told, she greeted Coleridge's visitors with 'freezing looks'. Dorothy admits that they were "never very comfortable at Greta Hall after two or three days," after which time "their company ceased to do Coleridge any good." Sarah always called him Samuel both in her talk and letters; and this word he detested for some unspecified reason. Many a time after his marriage he writes, "I ought to be happy, and so I am." This is only an attempt to convince himself intellectually of his happy life with Sarah. But emotionally they never met on the same plane.

Mrs. Coleridge laid great store by the financial needs of the family, and this was his weak point. Coleridge stayed in Germany longer than he said earlier. She had no money. She disliked his indifferent attitude towards money. By contrast she found Southey an ideal to be admired. This admiration grew as she watched the public reaction to the Lyrical Ballads. With a malicious glee she told Poole : "The Lyrical Ballads are laughed at and disliked by all with very few excepted" (March, 1799). On April 2, 1799 from Bristol she tells him, "The Lyrical Ballads are not liked at all by any". Though she had no literary talents worth mentioning, she felt competent enough to draw her own conclusion about the literary accomplishments of her husband, on the basis of what Southey and others talked.

This emotional rift made him incomprehensible to her. Those in Bristol asked her many a time whether her husband was converted to the Government cause. She asked Poole : "It is very unpleasant to me to be often asked if Coleridge has changed his political sentiments—for I know not properly how to reply—pray furnish me" (April 2, 1799). This is pitiable. She realises that Coleridge's friends knew his mind better than she herself. In admitting her ignorance of the working of his mind, she only draws the attention of his friends to the alienation that has already set in. This alienation troubled the all-too-sensitive Coleridge who married her in that onrush of the pantisocratic ideas when he felt that she will enable him and herself to realize the ideals of pantisocracy. The disillusionment came slowly.

She felt that her husband achieved nothing by leaving her for Germany. The projected volume on Lessing is not there. He had raised a huge debt. He had anticipated a great share of Wedgwood annuity for 1800. The financial uncertainty aggravated her dislike and mistrust alike, at a time when she found Southey successful. In 1800 Coleridge informed Poole: "Sara being Sara, and I being I, we must live in a town or else close to one . . . That which suits my wife does not suit me, and what suits me does not suit my wife." On Oct. 21, 1801, he wrote to Southey : "Sara—alas! we are not suited to each other." He speaks of his efforts to adjust himself to his wife's behaviour. But " If our mutual unsuitableness continues, and (as it assuredly will do, if it continue) increases and strengthens—why then, it is better for her and my children that I should live apart, than that she should be a widow and they orphans. Carefully have I *thought thro'* the subject of marriage and deeply am I convinced of its indissolubleness. The indissolubleness of the marriage tie and his inability to be with her dragged him into a severe mental worry and conflict.

To this is added his intense love for his children. So he cries pathetically: "If my wife loved me, and I my wife, half as well as we both love our children, I should be the happiest man alive —but this is not—will not be" (to Southey, 9 Nov., 1801). As Dorothy remarked of her : "She is indeed a bad nurse for Coleridge, but she has several great merits. She is much, very much to be pitied, for when one party is ill-matched the other necessarily must be so too. She would have made a very good wife for many and other man, but for Coleridge ! ! Her radical fault is want of sensibility, and what can such a woman be to Coleridge?" It is an intense sensibility that dogged him. He could not live with her, nor could he dissolve his marriage. The sanctity he attached to the institution of marriage came into bitter conflict with his own sensibility. In this tragic situation he could not give up his filial affection. For many years he struggled inwardly, and at last without breaking up the union he managed to live alone. When this crisis was at its peak, he wrote a few stanzas on April 4, 1802 as a letter to Sara Hutchinson, the sister of Mary who later married Wordsworth.

2. These stanzas were occasioned by an elusive being who bewitched Coleridge as early as 1799, the year when his dissatisfaction with his home began. On April 21, 1802, Dorothy wrote in her Journal : "Willam and I sauntered in the garden. Coleridge came to us, and repeated the verses he wrote to Sara. I was affected with them, and . . . . in miserable spirits. The sunshine, the green fields and the fair sky made me sadder; even the little happy sporting limbs seemed but sorrowful to me . . . I went to bed after dinner, could not sleep." In a letter of 13th Nov., 1802 to his wife, he draws a full picture contrasting their different tastes, attitudes, and aims. And on Oct. 20, 1802 he told Tom Hedgwood : "After my return to Keswick, I was, if possible, more miserable than before. Scarce a day passed without such a scene of discord between me and Mrs. Coleridge, as quite incapacitated me for any worthy exertion of my faculties by degrading me in my own estimation". A few lines later he becomes more poignant: "alas! the less I loved my wife, the more dear and necessary did my children seem to me." And after quoting the last seven lines of the sixth stanza, he summarises his sorrows, tells him that he was made to feel that I was myself growing a worse man", and then bursts forth in a cry of despair: "O dear Sir ! no one can tell what I have suffered. I can say with strict truth, that the happiest half-hours, I have had, were when all of a sudden, as I have been sitting alone in my study I have

burst into tears". The domestic turmoil intensified his former inferiority-complex and made him distrust his own creative abilities and faculties to a great extent. On 17th February, 1803 he told Southey: "In an evil day for me did I first pay attentions to Mrs. Coleridge. . . . I am no elm!—I am a crumbling wall, undermined at the foundation"? The mood of dejection thus started early in 1799, grew as years rolled by. In that mood, Coleridge felt that no creative activity can take place since the latter is dependent on Joy.

The dejection did not commence with his meeting Sarah Hutchinson. A few months after his marriage it began ; and it acquired an impetus and a living force shattering his career towards the end of 1799. On November 24, 1799 he wrote in his Notebook: "Conundrums and puns, and stories and laughter with Jack Hutchinson. Stood up round the fire". Then follows a Latin sentence which may be rendered thus : "And pressed Sarah's hand a long time behind her back and then love first (pierced) me with a light arrow-tip, poisoned alas, and incurable". He first met Sarah Hutchinson at Sockburn early in November, 1799. Curiously enough it was at Sockburn that he wrote, or at least thought of, the poem, *Love* which was published as an introduction to *The Tale of the Dark Ladie*. Probably at this time at Sockburn he scribbled in his notebook the words : "Few moments in life are so interesting as those upon affectionate reception from those who have heard of you, yet are strangers to your person". A new mood was awakened by an affection and by a love that he vaguely felt he had once for Mary Evans.

Love (1799) presentes the romantic passion fusing a certain mild delicacy with a pathetic langour. Though it lacks an ardent passion, Coleridge held it to be inimitable (letters Etc. Ed. Allsop, I.95). With a pleasing simplicity and a rare beauty, he intellectualises the passions. This poem published on December 21, 1799, is called 'a woeful tale of love'. Presenting a record of the happenings at Sockburn, he speaks of Sarah Hutchinson as 'my own dear Genevieve':

"For well she knew, I could not choose
But gaze upon her face".

About his narration of the story of the Knight to her, he writes :

"I told her, how he pin'd, and ah !
The deep, the low, the pleading tone,
With which I sang another's love,
Interpreted my own !"

The poem thus turns out to be an expression of his own love in disguise. It is the earliest statement of his love for Sara. It is quite possible that in his tale replete with Sockburn atmosphere, Sara too

> "Wept with pity and delight—
> She blush'd with love and maiden shame,
> And like the murmurs of a dream,
> I heard her breathe my name".

The entire poem breathes a tender conviction born of his own recent experience. What he visualised in this poem he later gave us in *A Day-dream* (1801-2). Here he addresses her 'Asra' and declares his love !

> "I dream thee with mine eyes, and at my heart I feel thee !

In this lady he seemed to have felt the being of Mary Evans. On the first page of the Gutch Note-book is a quatrain expressing his yearnings and dejection as early as 1798 :

> "I mix in life, and labour to seem free,
> With common persons pleas'd and common things,
> While every thought and action tends to thee,
> And every impulse from thy influence springs".

The realization of what he lost by giving up Marry Evans and by marrying elsewhere constantly haunted him. And his meeting with Sara Hutchinson in November, 1799, only aggravated and further intensified this note of dejection.

On July 25, 1801, he described Sarah Hutchinson to Southey as "so very good a woman that I have seldom indeed seen the like of her." In a letter of September 19, 1801, to Daniel Stuart he described her as "one very dear friend". On the 18th of January, 1802, he wrote in his Notebook : "If I have not heard from you very recently, and if the last letter had not happened to be full of explicit love and feeling, then I conjure up shadows into substances—and am miserable". This is a reference to the same Sarah Hutchinson ; and it indicates the growing despair that appeared to drive him away from any creative activity. This despair became acute as he came to realise that he married hastily a woman whom he never loved and whom he could not love. On November 14, 1804, in a letter to Southey we find him crying : "I was blasted in my only absolute wish, having married for honour and not for love". Temperamentally he could not give up his moral obligations ; and as an emotional being he could not think of living with his wife. In a poet whose major work centres round the problem of love in its manifold aspects, this is a painful situation. ✓ 17·7·73

Yet he fought his lonely battle heroically. Even in 1808 he could tell Daniel Stuart : "If sense, sensibility, sweetness of temper, perfect simplicity and an unpretending nature joined to shrewdness and entertainingness, make a valuable woman, Sara Hutchinson is so : For the combination of natural shrewdness and disposition to innocent humour joined with her perfect simplicity and tenderness is what distinguishes her from her sister". And in 1810 he has a Notebook entry : "One human being, *entirely* loving me would not only have satisfied all my hopes, but would have rendered me happy and grateful, even though I had no friend on earth, herself excepted".

His refusal to go beyond his moral and religious convictions fomented the mood of dejection. Such a mood was uncongenial to the exercise of the poetic imagination. A poem may deal with sorrow, with the tragic facts of human life ; but in the act of creative composition he always felt the experience of a profound joy and universalised it as a general principle. As he came to feel his inability to adjust himself to his wife, and as he came into contact with Sara Hutchinson, he not only became gloomy but came to believe that he cannot continue his poetic career.

4. This conviction in the loss or absence of his creative activity is first articulated, surprisingly enough, a few days after he met Sara at Sockburn. On 19th Dec., 1799, within a month of his acquaintance with her, he informed Southey : "I am afraid that I have scarce poetic enthusiasm enough to finish Christabel." He described himself on 29th July, 1800, as "S. T. Coleridge, Esq. Gentleman—Poet and Philosopher in a mist." The mist is to symbolise the frost, the benumbing of his creative sensibility.

The few poems that he composed after this time are important mostly for their self-revelatory character. Some of them are even tragically poignant. On Dec. 17, 1800, he informed Thelwall : "As to Poetry, I have altogether abandoned it, being convinced that I never had the essentials of poetic genius, and that I mistook a strong desire for original power." This conviction grew day by day stronger. On March 25, 1801, he told Godwin that "the poet is dead in me—my imagination (or rather the somewhat that had been imaginative) lies, like a cold stuff on the circular rim of a brass candle-stick, without even a stink of tallow to remind you that it was once cloathed and mitred with flame . . . . . . Taste and feeling have I none." Some effort he made to break through this trance ; and *The Picture* expresses at least one sincere endeavour to give up his life of dreams and to look life in the face boldly and heroically. But he ceased to be a poet when he came out of his dreams and visions. Yet on 19th July, 1802 he informed Southey : "Sickness and some other worse afflictions, first forced me into *downright metaphysics*, for I believe that by nature I have more of the poet in me." This was three months after he composed *Dejection*.

In a reflective and analytical mood, he informed Sara on 27th July, 1802 : "It has been my lot to be made a fool of by madmen, and represented as a madman by fools." Two days later he actually speaks of a change for the better in his wife's behaviour. On the 22nd Nov., 1802, after the *Ode* was published, he wrote a touching letter to his wife, pleading : "If you read this letter with the tenderness with which it is written, it will do you and both of us *good*." He tells her of "the cheerfulness inspired by thought of speedily returning to you in love and peace." Still on his way home he spent some days at Gallow Hill, as we find the scene recalled in the seventh stanza (lines 99 to 110). There is a vacillation and brute facts always managed to drive him to an uncomfortable corner from whence he read his own life as totally useless. So on the first of August, 1803 he told Southey in a very pathetic way : "I had power not strength—an involuntary imposter—I had no real genius, no real depth." And the poems he composed after 1799 November carry with them a touch of depression arising from a moral crisis. As he said in his Prospectus to *The Friend, 1809*, the dejection mind involves "doubt or disbelief of the moral government of the world, and the grounds and arguments for the religious hopes of human nature."

5. In October, 1800 Coleridge published *The Mad Monk*. Though he called it 'an ode in Mrs. Radcliffe's manner,' he gives us 'a voice from Etna's side.' Mountains and volcanoes are Coleridge's symbols for the creative activity, while the cave stands for the subliminal. 'Over a cavern's mouth' there was an invisible monk or hermit whose 'music flowed along in melody.' This voice sang :

"There was a time when earth, and sea, and skies,
    The bright green vale, and forest's dark recess,
With all things, lay before mine eyes
    In steady loveliness:
But now I feel, on earth's uneasy scene,
    Such sorrows as will never cease ;—
    I only ask for peace ;
If I must live to know that such a time has been !"

This is the voice of the creative artist Coleridge; and it expresses his own spiritual distress. The distress of the soul is connected with the problem of poetic inspiration. He wants peace, but gets chaos and he is lost in the maze.

"The sun torments me from his western bed,
Oh, let him cease for ever diffuse
Those crimson spectre hues!
Oh, let me lie in peace, and be for ever dead!"

Here is a pathetic awareness of a peace that will come to him after death. He would prefer death to the agonies he was subjected to

A Stranger Ministrel of November, 1801 takes us to the real source of this dejection. He pines for the 'lady of sweet song,' for 'her soft blue eyes.' But the voice of Skiddaw, symboliszing the voice of his muse, answers that

"She dwells belike in scenes more fair,
And scorns a mount so bleak and bare."

The poet has become bleak and bare. He has lost the lady and consequently his poetic activity too. But in his unyielding despair, he cries out:

"Thou ancient Skiddaw, by this tear,
I would, I would that she were here!"

With all this in August, 1801 he bathed in the sea inspite of the doctors; and in this, he says, "my soul fulfilled her mission." The stanzas he composed *On Revisiting the Sea-shore* he sent to Southey on August 11, 1801, stating that these are "a few lines which will please you as a symptom of Convalescence—for alas! it is a long time since I have cropt a flowering weed on the sweet Hill of Poesy." For the first time he informs an outsider of his lovē for Sara in the last stanza:

"O ye hopes, that stir within me,
Health comes with you from above!
God is with me, God is in me!
I cannot die, if Life be Love."

And in the poem *To Asra* (1801) he is more explicit. If he could only transmute the whole of his love

"to one rich dower
Of Happy Life, and give it all to thee,
Thy lot, methinks, were Heaven, thy age, Eternity."

For a brief time his emotions revived hopes in him. And these hopes were dashed too soon by various other factors.

6. Significantly enough the motto for *Dejection* : *An Ode* is the seventh stanza of the ballad of *Sir Patrick Spence* which reads :

"Late, late yestreen I saw the new Moon
With the old moon in her arms ;
And I fear, I fear, my dear Master,
That we will come to harm."

Coleridge takes the second half from the preceding stanza:

" And I fear, I fear, my Master dear,
We shall have a deadly storm."

The moon plays a prominent part in the poetry of Coleridge. The same moon strikes us with a vague tragic foreboding here. Sir Patrick Spence was drowned in a storm; and the poet was in a spiritual storm which seeks to drown his entire creative and emotional life. He is not 'Coming to harm' simply, for he is out to face 'a deadly storm'; and he does not expect to come out of it safely. As he said in Feb. 1796 to Wade : "I verily believe no poor fellow's idea-pot ever bubbled up so vehemently with fears, doubts, and difficulties, as mine does at present......My past life seems to me like a dream, a feverish dream—all one gloomy huddle of strage actions, and dim-discerned motives;—friendships lost by indolence, and happiness murdered by mismanaged sensibility."

7. E.de Selincourt observed: "The poem is a psychological analysis as acute as it is tragic, of his own mental, emotional state viewed throughout in conscious and deliberate contrast with that of his poet friend, Wordsworth." This is a difficult claim to make. Wordsworth began his Immortality Ode on 27th March, 1802 and wrote the first four stanzas. The very first stanza echoes Coleridge's expression of the distress of his soul in *The Mad Monk.* On the 28th March Wordsworth and Dorothy came to Keswick, more or ess preoccupied with the same problem of the falling away of poetic nspiration. On the 4th April, 1802 Coleridge's Ode was complete. It is a powerful expression of the crisis in his own soul and he recited it to his friends on April 21, 1802. Evidently he felt that Wordsworth too was facing that spiritual crisis, though it was of another variety.

It is a specific feature of Coleridge's mind to wind in and out of his thinking among the outskirts and to proceed with a sudden meditativeness he took an ardent delight in all things; and he strikes our imagination more when he exhibits a childlike pity for himself. To this is added an imaginative dreaminess that he could never resist, for the simple reason that it was integrated to a deep love. And his charm becomes irresistible when he indulges in self-thinking since in those moments he is happier with the thinking than with the self. The intricate workings of his own soul gave him the material here. But if it were purely personal it could not remain with him since he lacked the power to handle the concrete. He manages to sustain the material in this poem with the aid of the power derived from the psychic world. And when he finds that his spiritual experiences agree with those of Wordsworth, he has a subject capable of being universalised. In this light he echoes Wordsworth in the first draft he sent to Sara. Wordsworth says that

"The things which I have seen I now can see no more;" and Coleridge observes :

> "But oft I seem to feel and evermore I fear
> They are not to me now the Things which once they were."

8. The poem is a supreme example of the poetical completeness which is a state of "judgment ever awake and self-possession", and in which we find "enthusiasm and feeling profound or vehement." Such a result presupposes a systematic and rigorous revision of the text. As it was composed on the fourth of April, 1802, it ran to 340 lines. On July 19, 1802 he sent it to Southey; but this time it had only 139 lines. It was published on Wordsworth's wedding-day which appears to have nearly coincided with the seventh anniversary of his own wedding. That was on the fourth of October 1802, and then it ran into 139 lines, though it does not agree fully with the poem he sent to Southey. Thus in six months he thought fit to reject 201 lines of the original. How did he proceed with the original text? What were the passages he deleted? And why did he suppress them? The answers to these questions have a bearing on Coleridge's theory and practice of poetry, and on the meaning and value of the *Ode* as a whole. An enquiry on these lines will land us in a situation in which it would not be possible for us to argue that the poem is a mere response to the first four stanzas of the *Immortality Ode*. Wordsworth's poem may have just initiated the explosion; but Coleridge was not merely responding to his friend's thoughts and feelings.

9. *Dejection : An Ode* was completed in 340 lines on the fourth of April, 1802, and it was an epistle to Sara. Immediately after,

Coleridge realized that it is more than an epistle. We do not know the text he read out to Wordsworth and Dorothy on the 21st of that month. He informed Poole on 7th May, 1802: "I ought to say for my own sake that on the 4th of April last I wrote you a letter in verse; but I thought it dull and doleful and did not send it." Most probably this poem was the same as that he sent to Sara. Then it would mean that it is not simply Sara that occasioned the Ode. With a few minor alternations he may have felt that Poole, his lifelong friend, should know of the crisis. He was trying to lay bare his soul. But as a poem it was at that stage too personal and too sorrowful. Such an atmosphere, he must have thought, is not proper for a poem.

Tracing his dejection to 'sickness and some other and worse afflictions he told Southey on 19th July, 1802: "In a poem written during that dejection to Wordsworth, and the greater part of a private nature—I thus expressed the thought—in language more forcible than harmonious." Then he quotes the lines 231 to 242 and 265 to 271. These are followed by lines 1 to 51, 296 to 323, and eleven lines from the close. Then he observes: "I have selected from the poem which was a very long, and truly written only for 'the solace of sweet song', all that could be interesting or even pleasing to you." This is followed by lines 184 to 215.

Here he changed the person to Wordsworth. He addressed it first to Sara, then altered it to Poole; and later he made others believe that it was addressed to Wordsworth. Either he really believed that the poem can be addressed to any one he liked, or he did not want others to know that it was to Sara he wrote these lines. But on April 21, Dorothy was told that they were written to Sara only. This constant shifting and make-believe attitude takes us back to Coleridge's preoccupations with the dreams and visions, and also to a certain instability of his own mind at the time. It was with this background that he made a selection ; and this version is to convey the mental and spiritual instability, and also the slippery nature of the world in which he moved. It was a world in which dreams seem to collide with actualities.

By omitting 22 lines he evolved the present sixth stanza first. Next he brought in three passages. The present first three stanzas are made to follow the present sixth. A passage towards the end is transformed into the present fourth and fifth stanzas. These are followed by the heavily and frequently revised last stanza. At the end he placed the present seventh stanza.

On the 29th July, 1802, he wrote to Southey: "All my poetic genius (if ever I really possessed any *genius* and it was not rather a mere general *aptitude* of talent and quickness in imitation) is gone, and I have been fool enough to suffer deeply in my mind, regretting the loss, which I attribute to my long and exceedingly severe metaphysical investigations, and these partly to illhealth, and partly to private afflictions which rendered any subject immediately connected with feeling, a source of pain and disquiet to me". Then he quotes lines 232 to 242 and says: "here follow a dozen lines that would give you no pleasure, and then what follows". These are the lines 265 to 271. These two passages make up the present sixth stanza. Evidently Coleridge took this stanza to be Central to the entire poem. It is to provide the point of reference for the whole.

10. After the line, 'my shaping spirit of Imagination', he deleted 22 lines which are too personal. He can speak

"of those habitual Ills
That wear out Life, when two unequal Minds
Meet in one House and two discordant wills;" (243-45)

but he does not want to mention them because this leaves him 'a fate austere', a 'fixed and hopeless' situation. On the other hand it is Sara who is 'my comforter! a Heart within my Heart', that would 'make up a world of Hopes and Fears for me'. Still he contrasts his old Sara with this new Sara:

"Methinks to weep with you
Were better far than to rejoice alone—" (256-7)

His 'coarse domestic life', he bemoans, 'has known no habits of heart,' no 'nursing sympathy'; and his only griefs are 'such as dull and deaden me'. With 'no mutual mild enjoyments' and 'no hopes of its own vintage', he cries:

"Whence when I mourned for you, my Heart might borrow
Fair forms and livings Motions for its Sorrow" (263-4).

Not only is all this too personal but it is a plain statement of fact as he knew. In deleting this passage, Coleridge was trying to secure a certain degree of objectivity to his experience in and through the activity of imagination. While he bemoans the suspension of that gift imagination with which he was born, he took great pains and exercised that very gift in giving a definite artistic form to this *Ode*. It is to point out this strange paradox he made present sixth stanza the very first one when he sent the poem to Sotheby. Thereby he made out that the *Dejection* he was speaking about has as its theme not the loss, but a temporary suspension, of imagination. This has a vital bearing on his own imagination past and present. This imagination, n Coleridge, takes the form of love, and at times it is revealed in his outlook on children.

On 10th August 1802 he wrote to Sarah Hutchinson: "O how many a Cottage bairn have I kissed or longed to kiss!—There is a something in children that makes love flow out upon them, distinct from beauty, and still more distinct from good behaviour". In the first draft of the Ode there are eighteen lines on his 'little children' who

'are a joy, a Love,
A good Gift from above!
But what is Bliss, that still calls up a woe,
And makes it doubly keen
Compelling me to *feel*, as well as *know*,
What a most blessed Lot mine might have been"
(272-7)

His love for his children complicates his dejection. He seems to love them for the simple reason that they are children as such; for, when he remembers that 'those little Angel Children' are his own.

"I have half-wished they never had been born" (282)

They *always* bring 'sad thoughts' and he is forced to 'sing my lovesong, with my breast against a thorn' (285). As his love for them becomes greater, he finds 'the Joy far less' (289). The way he deleted this beautiful passage mercilessly shows that aspect of the imaginative activity which not only tends to give an artistic shape to the chaos but raises the personal to the level of the universal. In its final form the *Ode* is meant to convey the vain yearnings of man in the pursuit of an ideal.

On the 13th of August 1803 to Sir George and Lady Beaumont he sent a copy of *Dejection* along with Wordsworth's *Resolution and Independence*. Here the *Ode* retains lines 1 to 86 of the final text; and he adds at the end: "I am so weary of this doleful poem that I must leave off". On Oct 1st of the same year he informs them: "Great indeed is the charm, which yearning memory gives to the forms of things". The process of revision continued for at least sixteen months; and by 1803 August he could not allow the last seven lines of the sixth stanza. These very lines were dropped even in October, 1802 when the *Morning Post* published it. But in July, 1802 both Sotheby and Southey found these lines in the text they had. In these lines he speaks of his 'wisest plan' as the dissociation of thinking from feeling. This dissociation he relates to the suspension of the imaginative activity. But in his letters he tells us many a time that his thinking and feeling are inseparably woven into a unity. Then the *plan* he outlines here is an attempt to run contrary to his own nature. Evidently the realisation of such an incongruity led him to doubt the value of these lines. Moreover these lines do tend to spoil the rhythm of the stanza and they are also to a certain extent not poetic enough. He who thought that there is a serve *logic of poetry* could not have allowed these lines to go scot free.

But he informed his brother George on 2nd October, 1803 : "In very truth my heart has been strangely shut up within itself." Then he quotes the last seven lines of the present sixth stanza.' This may be an attempt to justify himself before his brother who was already aware of Coleridge's domestic crisis and who was deeply annoyed at that. One year earlier, on 20th Oct, 1802, he quoted these very lines in a letter to Josiah Wedgewood, though the published version of Oct. 4, 1802 did not have them.

The last four lines of the first stanza were added after April 4, 1802. They are evidently intended to intensify the contrast between his earlier and present reactions to the sights and sounds of Nature. It may be they were added sometime in 1816 or 1817 when he was preparing the *Sibylline-Leaves* for the press. Coming to the second stanza we find that after the fourth line, there were originally ten lines which were transformed to two by retaining a line and a half. The other lines were dropped because they do not materially contribute to the meaning and value of the poem.

11. The first three stanzas were taken as a unit by Coleridge. They provide the basic pattern and outlook. There were 132 lines after the third stanza. These lines have quietly gone out of this Ode. At the end of the third stanza he observes that he

> "may not hope from outward forms to win
> The passion and the life, whose fountains are within."

The lines that follow provide a valuable commentary on these pregnant lines. These forms being 'lifeless', they cannot impart anything. Even his 'gentle' and 'sweet thought' of Sarah 'feebly stirs his heart'. This feeble stirring is only the result of a number of experiences that he had of late. He was, he assures her, from his early school-days, used to feel intensely. If he is not warm enough now, it is not due to the want of a sensibility. He used to tell himself often,

> "There does not live the Man so stripp'd of good affections
> As not to love to see a Maiden's quiet Eyes
> Uprais'd, and linking on sweet Dreams by Dim Connections
> To Moon, or Evening Star, or glorious western skies".
> (68-71).

Something of this feeling appears in *Frost at Midnight,* and Lamb has given a more precise shape to it his essay on the *Christ's Hospital.* Even at that early time

> "Thought would so pursue me,
> That often it became a kind of vision to me!" (72-3)

Not only was there an intellectualisation of facts, but thought too was in turn rendered into image. The abstract and the concrete are freely convertible into one another; and the dejection that came over is due to the loss of this power of converting one to the other. This is one aspect of the imaginative activity with which he was familiar; and the *Ode* has this aspect as its background.

12. Then follows a passage which makes the motto relevant to the entire *Ode.* Sir Patrick Spence commissioned to sail tells his men that he saw 'the new moon with the old moon in her arms'. This is said to be ominous, and he visualises 'a deadly storm'. Now the moon plays a very prominent part in the poetry of Coleridge. The mystery of the world of *the Ancient Mariner* haunted by the spirits is intensified by the moon (263-268). The 'small and dull' moon hidden behind 'the thin grey cloud' emphasises the helplessness of Christabel. The silence in moonlight becomes uncanny in *Frost at Midnight.* There is 'a rich and amber light' in *Lewti.* The rejoicing in the starlight is embodied in *The Nightingale.* There is 'a waning moon' in *Kubla Khan.* The moon appears to have an organic relation to that Joy which is the source of the imaginative activity. 'The horned moon' or the 'waning moon' looks 'both small and dull', thereby taking us to the waning of a supreme power. So now in this *Ode,*

> "I guess, that thou hast stood
> And watched yon Crescent, and its ghost-like Moon".
> (82-3).

This ghost-like moon is the symbolisation of Sir Patrick Spence's 'new moon'; and it takes us to the supernatural which is for Coleridge, the spiritual. The deadly storm he took over is a storm in the spiritual world, a great convulsion through which he was passing. When Coleridge read the 'harm' of the Ballad by 'storm', he may have been identifying himself with Shakespeare's Lear. Whatever it may be, the atmosphere of the *Ode* has to be sought only in 'its ghost-like moon' even when Coleridge deleted it in his final text, and even when he did not send this passage to any save Sara.

13. Then he refers to his earlier experiences at Sockburn and elsewhere. These experiences appear to have haunted his memory for a long time. Though he deleted this passage from the *Ode*, later he embodied it in an interesting poem *A Day-Dream*. Into these experiences he weaves a letter he wrote because of which, he says,

> "thou art weak and pale with sickness, Grief, and Pain—
> And *I*,—*I* made thee so !" (128-129)

He despairs at the thought that he made her unhappy. But if his dreams are ever realised, he says, echoing a line from Wordsworth's *Ode*,

> "I too will crown me with a Coronal—
> Nor shall this Heart in idle wishes roam Morbidly soft !"
> (136-138)

Then a painful awareness of the conflicting issues forces him to reconcile himself to his sad lot. This fluctuation is an essential feature of all dejection, and it is carried into the present text more by means of rhythm. Here he would like to be away from her ; for,

> "To see thee, hear thee, feel thee—then to part
> Oh ! it weighs down the heart !" (155-6).

This would be a transient experience and it is like 'poison in the wine' (160) and it 'eats out the pith of joy' and 'makes all joy hollow' (161). Moreover she is 'a blossoming tree' and his visit might make her 'a withered branch' (168). Then he is faced with a dream of some mishap befalling her. If he cannot hear her or view her, if he cannot bring her health again ; and all this is

> "At least to hope, to try—
> By this Voice, which thou lov'st, and by this earnest Eye—"
> (182-3)

He retreats with a shudder from this possibility :

> "Nay wherefore did I let it haunt my mind,
> This dark distressful dream ?
> I turn from it, and listen to the wind". (184-6)

It is curious to notice that this printed text is altered finally as the opening of the seventh stanza :

> "Hence, viper thoughts, that coil around my mind,
> Reality's dark dream !
> I turn from you, and listen to the wind".

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As it stands, this passage has little connection with the preceding stanza of the final text. Still Coleridge retained the lines up to the sixth line of the present eighth stanza. Then he deletes eight lines that contrast his joy of the earlier time with his present 'mourning' and 'sore wrongs'.

Once he speaks of the joy that made him buoyant, he is in his element. Joy recalls his own awareness of the imaginative activity which is next presented in the next eleven lines. These now form the first part of the sixth stanza which Coleridge wanted Southey to read as the first stanza. The suspension of this gift of imagination makes him again complainingly and plaintively personal in twenty-two lines, followed by the last seven lines of the present sixth stanza. Here is a declaration of a deliberate withdrawal into abstruse metaphysics ; and this soon gives place to his thoughts about his children in eighteen lines. As he realises that the father's joy in him is becoming less, and as he finds that his love for the children becomes greater, he is drawn more and more inward. This withdrawing into his own self makes him echo what Wordsworth felt for different reasons:

"These Mountains too, these Vales, these Woods these Lakes,
Scenes full of Beauty and Loftiness
Where all my Life I fondly hop'd to live—
I were sunk low indeed, did they no solace give ;
But oft I seem to feel, and evermore I fear,
They are not to me now the Things, which once they were."
(290-295).

He seeks an explanation for this change, and he finds it again in the creative nature of man. So there follow the lines that make up the fourth and fifth stanzas of the final text. Sara has a different situation.

"Sister and friend of my devoutest choice,
Thou being innocent and full of love...
Thou free'd awhile from cares and human Dread
By the immenseness of the good and fair
Which thou see'st everywhere,
Thus, thus, shoulds't thou rejoice !
To thee would all things live from pole to pole,
Their life the eddying of thy living soul!

O dear! O Innocent! O full of love,
A very friend! a Sister of my choice—
O dear, as Light and Impulse from above,
Thus may'st thou ever evermore rejoice !"
(324-25 & 331-340)

It is with this wish that the poem closes. Into this sad and quiet mood of resignation is breathed a wishful and delicate yearning.

14. All this points to a few basic facts. Though the poem appeared to arise from Coleridge's reaction to the first four stanzas of Wordsworth's *Ode*, it was in reality the culminating expression of a number of conflicting and incompatible ideas and feelings. Wordsworth was married on 4th Oct. 1802, and the seventh anniversary of his own wedding fell three days later. He published the *Ode* in the *Morning Post* on the 4th of Oct. 1802. There seems to be some form of an ironical gesture towards all thosei nvolved in the poem. Then the poem was addressed to Sarah Hutchinson and it underwent much revision. The *Ode* is supposed to deal with dejection and joy, with the source of all poetic composition. Moreover, a personal document was made public apparently to point out that the personal experience is sufficiently universal. The creative artist and the critic are together at work in the *Ode*. The *Ode* then is not a simple psychological analysis of his emotional crisis nor is it viewed as a complement of, or contrast to, the mental state of Wordsworth.

15. The *Ode* as it is now opens with the Aeolian Harp. Recalling the ballad with ease and humour Coleridge writes :

"Well! If the Bard was weather-wise, who made
The grand old ballad of Sir Patrick Spence,
This night, so tranquil now, will not go hence
Unroused by winds."

He sees 'the old moon' in the lap of the new-moon, 'foretelling the coming-on of rain and squally blast'. There was a disaster in the old ballad. Coleridge as the subsequent stanzas tell us is visualising neither a physical storm nor a physical death. He uses the phenomena mentioned in the ballad as symbols for the spiritual events. He is to sing here the annihilation of the creative spirit brought forth by an uncontrollable and unresolvable spiritual crisis. The 'strings of this Aeolian lute', he says, would prefer to be mute in the context enlivened by the 'phantom light'. In 1795 the harp was caressed 'by the desultory breeze' 'like some coy maid half yielding to her lover'. Now it is premonitory. Still there is a remote ray of hope lying at a distance, for this light is 'circled by a silver thread'. From the world of medieval superstition, Coleridge effects a transition to the credible spiritual world. As he enters that world, the very gift that he feels to be losing comes to his aid, and he catches something of the grand style. When he reads the marks of the 'deadly storm', he becomes oratorical :

> And oh ! that even now the gust were swelling,
> And the slant night-shower driving loud and fast !
> Those sounds which oft have raised me, whilst they awed,
> And sent my soul abroad,
> Might now perhaps their wonted impulse give,
> Might startle this dull pain, and make it move and live !"

In the original draft the first two words were 'O ! Sara !" ; and the last four lines were not there. It is not correct to hold that only the theatrical in nature appealed to him. Here he is forced to speak of the striking, sudden outbrusts in nature because these alone agree with what he feels in himself. Later he is to tell us that nature exists within us, that the artist creates nature. The sounds he hears tonight were not unfamiliar. He did go through them and they evoked some of the finest responses in him. He wishes that now too these sounds should revive in him the same old sensibility which alone can deaden the pain of the spiritual convulsion. Then poetry would transport him into his familiar world of dreams.

This is the background of the *Ode*. It is one of a spiritual storm where there is an awareness of an impending disaster united to a wistful longing for something living and joyful. It is not a mere aimless turmoil that grips him. Hence quite significantly he opens the *Ode* with a longing that the storm might break forth in spite of the apparent calm of the evening. Following Berkeley's theory that Nature reveals a language of signs, he looks at the sky and seeks to discover such a language there for something in him. He is depressed as his inspiration fails him. By the time he comes to the second stanza he finds this language. This discovery comes to him as he unfolds a self-judgment and a completed poetic ideal :

> "A grief without a pang, void, dark, and drear,
> A stifled, drowsy, unimpassioned grief,
> Which finds no natural, outlet, no relief,
> In word, or sigh, or tear—"

He finds his inner being to be empty and he is taken aback by the awareness of a lifeless depression. On Nov. 23, 1802 he wrote in his Notebook: "Take away from sounds etc. the sense of outness: What a horrid disease every moment would become—the driving over a pavement etc.—apply this to sympathy and disclosure of feeling (1. 1307). It is the loss of this outness that intensifies the dejection; and yet for Coleridge there can be no outness. Characteristically enough the setting is a stormy night with the moon appearing now and then. The thin clouds 'give away their motion to the stars'. The stars are 'always seen'; but as they glide behind or between the clouds, they alternatively sparkle and become dim, corresponding to the fluctuations in his own soul.

> "You crescent Moon, as fixed as if it grew
> In its own cloudless, starless lake of blue;
> I see them all so exceedingly fair,
> I *see*, not *feel*, how beautiful they are!"

The moon has a peculiar place in the poetic activity of Coleridge. The moon always inspired him and touched his poetic springs. He took the moon as "a symbol of the poet's power to transform the material world into a world of imagination" (Bowra). Here the moon points to his dejection, and he feels a certain chilling of the springs of poetry. Before the Mariner could bless the slimy creatures of the sea, he too could not feel. From the images of calm and movement he proceeds to contemplate the perfect and self-centred picture of illumination emanating from the lotus called the moon. The dim shapes revealed by the moon could still inspire him. But like the moon, his poetic spirit is too delicate. And when the crisis came, it was disastrous. It is significant that in a line deleted after 'lake of blue,' he speaks of 'a boat becalmed'. The becalming of the boat has a symbolic reference to the creative activity in Coleridge. ✓ 20·7·13

This stanza is reminiscent of Milton's invocation of the Celestial light in the third book of *Paradise Lost*. Coleridge needs his inspiring muse since he is caught in a 'wan and heartless mood'. The first eight lines of this stanza he quoted in his *Essay on Fine Art* to illustrate the principle: "When we declare an object beautiful, the contemplation or intuition of its beauty precedes the feeling of complacency, in order of nature at least: nay in great depression of spirits may even exist without sensibly producing it." But if a great depression is capable of coexisting with the contem-

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plation or intuition of the beautiful, it is a depression that is transformed into something other than a mere mood of dejection. Such a transformation will land the poetin a vision or dream. In this sense it would be proper to treat this *Ode* as a vision or dream of Joy; it is a fleeing from the world of facts to the world of the ideal. Here the ideal is represented by Sara. As he sees beauty in the external world only and not in the inner world, he cannot feel. To feel, the object must be inward, must become an element of his own being or vision. Something of the Miltonic self-possession helps him in enlarging his self and making it an all-inclusive whole, with the result that the emphatic yearning falls on feeling.

Reminiscent of the words of *Samson Agonistes*, and breathing the rhythm of the *Nativity Ode*, there comes the next stanza :

"My genial spirits fail;
And what can these avail
To lift the smothering weight from off my breast?
It were a vain endeavour,
Though I should gaze for ever
On that green light that lingers in the west :
I may not hope from outward forms to win.
The passion and the life, whose fountains are within."

His failure to respond to the green light of the evening particularly disturbs him and shocks him. The outward forms are no longer capable of evoking his passions and his zest for life. The sources of these passions are found only within, in his own soul. External nature cannot restore his vitality. She only makes him more tragic for she makes him aware of his loss of feeling. Coleridge always felt that thinking and feeling are closely bound with each other. The external seeks to disrupt this unity. But that with which he was endowed at birth cannot be rent asunder in this arbitrary fashion. The dissociation makes vain his endeavour to feel beauty. A certain loss of sensibility appears to be inevitable with regard to the external physical objects when one begins understanding that the only reality is the inward one. This Berkeleyan attitude, Coleridge can and cannot accept with his emphasis on dreams and on activity.

16. By this time he had begun noticing that even the source of moral evil lay in the submission to the senses. In the case of those "who are most reverie-ish and streamy" the roots of moral evil are to be found in "the streamy nature of the associative faculty".

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With this he advanced to the view that the central doctrine of a convincing system is the freedom and initiative of the moral will. This he took to be the divine spark in each human being. It is "the *I* of every rational Being" and it is the final source of true perception and faith. This moral or the rational will he called the 'primary imagination'. The 'secondary' or poetic imagination is one of its derivatives. This imagination he interpreted as the creative spirit governing poetry. It is not a mere state of inner harmony. It is a principle of reaching to the whole. It is a mystic intuition offering a world-view. The 'shaping spirit of imagination' and the gentleness of heart are bound together; and the dynamic unity of these two brings forth inner peace and harmony and poetry. It is then opposed to "that inanimate cold world" of "the poor loveless ever-anxious crowd" who are guided by the mechanism and utilitarianism and ego-centricism.

He informed Wordsworth at the time of the composition of the *Biographia* that "Life begins in detachment from Nature and ends in union with God." Writing in *The Friend* he observes : "In order to the recognition of himself in nature man must first learn to comprehend nature in himself, and its laws as the ground of his own existence." Nature, then, is, in a sense, inward; it is a living, creative principle. And what appears as the external universe is one with it. The subject and the object viewed by the spectator can be the complementary aspects of the same reality, though they are really one. As he observed in *The Garden of Boccaccio* :

"I see no longer ! I myself am there,
Sit on the ground-sward, and the banquet share,
'Tis I, that sweep that lute's love-echoing strings,
And gaze upon the maid who gazing sings."

Thus poetry at the time of the *Dejection* arises from man's identity with nature; and later it has its origin in the autonomous will. With this background he evolved the fourth stanza.

After quoting Plotinus, in the *Biographia* (2.240-1) he observes that this passage is "faintly represented in the lines, written many years ago, though without reference to, or recollection of, the above." These are the opening lines of, the fourth stanza. There may be a living spirit in Nature. But he felt that only the soul of the observer of Nature filled the Universe with life.

"O lady, we receive but what we give,
And in our life alone doth Nature live :
Ours is her wedding garment, ours her shroud !"

There is a mysterious agreement between the interpreting mind and the natural symbol in as much as both participate in a common life of the spirit. It is not a mere sympathy that is offered here. It is true, he argues, that Nature appears lovely when the spectator too is in a happy emotional state. But this loveliness is dependent on the mind of the spectator to the extent that he has ideas of beauty which he projects into the socalled external world. This projection is universally present. If Nature can have an influence over us, it is because of the spirit that contemplates it. He felt

"That outward forms, the loftiest still receive
Their finer influence from the life within."

These outward forms are created by man by virtue of the imagination primary which is present in every one and which renders the external universe possible. When we are caught in sorrow, this external too will present a gloomy spectacle, and then we see the old moon in the lap of the new moon from a purely superstitious angle. Thent oo will a tranquil scene become portentous of a mighty storm. The seeing is thus coloured by the feeling, and not the reverse. And Coleridge is lamenting the fact that his seeing is no longer charged with his feeling ; for then his dream world would be unreal and the physical universe real. But if the mystic colouring of his inner life animates every aspect of nature, then nature would be more a landscape of his own soul. This intuition, he says, is denied "to the poor loveless ever-anxious crowd". This 'ever-anxious crowd' always insists on accepting the external as the independently existing real; they are other-looking, and to them the other is lifeless. The 'inanimate cold world' does not allow them to 'behold' anything 'of higher worth'. An inanimate world that is cold to human feelings. emotions and imagination is a world devoid of any value, even if it is assumed to be a utilitarian world.

All this might mean that the poet is philosophizing. But Coleridge was always aware of his power, and also of the absence of a strong will to employ this power well. This drove him too often to despair; and when he was able to overcome this despair, he flew into the world of pure poetry. His power of "impassionating himself about intellectual conceptions" swells into a magnificent passion of pure thought. As he moves away from his starting point, he becomes more impassioned and imaginative. Speaking of the world which Imagination discovers, he observes

"Ah! from the soul itself must issue forth
A light, a glory, a fair luminous cloud
Enveloping the Earth."

Imagination transforms the 'inanimate cold world' into a living reality. It transforms the given and absorbs it into the spiritual reality. Hence in 1802 he said that Shakespeare is a 'metaphysician', with the senses of 'a wild Arab' or 'a North American Indian'. In 1811 he held that Shakespeare works from observation regulated by self-knowledge. By 1818 Shakespeare is taken to be 'self-sustained', for he works from meditation alone. Though he uses different words, the underlying thought is the same throughout. The 'fair luminous cloud' is a semi-intelligible mystic intuition that seeks to interpret the given in the language of symbols. Even the symbols emanate only from the soul.

He becomes more impassioned, and the positive statement that is central to the entire thought and feeling is contained in the lines:

"O Lady! we receive but what we give,
And in our life alone does Nature live".

It is imagination in and through which the poet creates. The awareness that he lost this power of imagination makes him dejected because he will not be able to shape his experiences into forms of beauty; nor will he be creating the forms of nature. And yet

"from the soul itself must there be sent
A sweet and potent voice, of its own birth,
Of all sweet sounds the life and element!"

The external then is the soul giving birth to itself as the outer. Naturally when the inward is torn by a convulsion, it can give rise only to an equally impetuous and disastrous external convulsion. This was the atmosphere with which the *Ode* began. As he said, "I am never very forward in offering spiritual consolation to any one in distress or disease. I believe that such resources, to be of any service, must be self evolved in the first instance. I am something of the Quaker's mind in this, and am inclined to wait for the spirit" (TT). As he put it elsewhere, 'the man that hath not music in his soul' cannot have 'the sense of musical delight' (B.L. 2.14).

The poet endeavours to transform this convulsion into a ritual of purification. In order to effect this ritual, he must become a weird spirit, a wild spirit of Joy and Music, of Beauty and Love. The inward glory is the Joy given to the 'pure of heart'. The religious motive of some of the earlier poems recedes into the background; and in its place is enthroned a new power.

> "Joy, Lady ! is the spirit and the power,
> Which wedding Nature to us, gives in dower
> A new Earth and new Heaven."

At this time Coleridge was following Berkeley who taught that *esse is concipi*, and not that *esse is percipi*. It is not the sensible experience that makes nature possible ; it is rather the conceiving or visualising, that is essential. And this activity is closely linked to a feeling of Joy. Music, he says, "produces infinite Joy...If we sink into music our childhood comes back with all its hopes and all its obscure reminiscences and with it faith, a reliance on the noble within us on its own testimony. We feel ourselves moved so deeply as no object in mental life can move us except by anguish, and here it is present with Joy. It is in all its forms still Joy" (P.L. 168). This Joy is closely connected with the creative act. And since the poet in the creative act becomes impersonal, he observes, "In Joy individuality is lost." (P.L. 179.) He could then say that Shakespeare "projected his mind out of his own particular being" (S. C. 1.212), "passes into all the forms of human character and passion", and "becomes all things" (B.L. 2.20); and that he "kept even in the high road of life" by an "energy of thought" which is always associated with Joy. Accordingly in this *Ode* the Joy is visualised as the 'strong music in the soul'. It is,

> "This light, this glory, this fair luminous mist,
> This beautiful and beauty-making power."

Here for once he grows impassioned at a purely abstract, intellectual conception. It is beautiful in itself, and it appears under varied forms. It is inwardly a state of Joy, and it is a power that creates beauty. In assuming a form, it becomes symbolic; tangible and yet vague, it is a 'fair luminous mist'. This conception takes us to Coleridge favourite conception of the moon. The moon spreads that 'fair luminous mist' which inspires him to a creative Joy.

As he told us in his *Kubla Khan* and elsewhere, it is the spirit of music, that makes him creative. He has the 'strong music in the soul', though he does not intend telling what precisely it is. Yet l says that Joy is essential to the creative act. By Joy he means th very music which is 'beautiful', and which at the same time is th 'beauty-making power'. So he writes :

> "Joy, Virtuous Lady! Joy that ne'er was given,
> Save to the pure, and in their purest hour,
> Life, and Life's effluence, cloud at once and shower,
> Joy, Lady! is the spirit and the power,
> Which wedding Nature to us gives in dower
> A new Earth and new Heaven,
> Undreamt of by the sensual and the proud."

The 'innocent Sara' has become the 'virtuous Lady'. Evidently ir nocence, virtue, music, and Joy are all the varied aspect of the creativ urge. This urge, he said earlier, moves freely with the two extreme of 'wedding garment' and 'shroud'. These two limits are joine together in Coleridge's mind in and through the spirit of music. Jo is the 'strong music in the soul'. Even in Dec. 1799 he told Southe that he could not finish *Christabel* because he does not have enoug poetic enthusiasm. On 2nd Jan. 1800 he informed Thomas Wedg wood : "Life were so flat a thing without enthusiasm." This Jo is beyond the reach of the senses and beyond the aspirations of th non-virtuous, because it is the inspiring muse of poetry. As he sai in the first draft,

"Joy is that strong voice, Joy the luminous cloud." It is stron or powerfully inspiring. But the association of music with moonligh made Coleridge replace the word 'strong' by 'sweet'.

This Joy is experienced intensely when we are aware of our selves, when we have that primary imagination which is a repetitio of the infinite act of creation as 'I AM' in the finite mind. Or to put it in a delightfully vague manner :

> "We in ourselves rejoice !"

Out of this primary awareness or experience there

> "flows all that charms, or ear or sight,
> All melodies the echoes of that voice,
> All colours a suffusion from that sight."

Here is the supreme source of all creativity apprehended, paradoxically enough, in what is deliberately called a state of dejection. It is the spring of all existence. And what he seems to be bemoaning is an absence of contact with this primary spring of creativity. The Joy is cut off by internal impediments and external afflictions as well.

The loss of the inner joy has resulted in the loss of the power of imagination, and consequently he has lost the power to create. The situation is brought about by a number of factors mentioned in the original draft, and deleted later. Even when the 'joy within him dallied with distress', he managed to survive because 'Fancy made me dreams of happiness.' Since he distinguished fancy from imagination in a very severe manner, it is apparent that he would not have had this dejection, if only these *dreams* were fashioned, not by fancy, but by imagination.

"But now afflictions bow me down to earth:
Nor care I that they rob me of my mirth ;
But oh ! each visitation
Suspends what nature gave me at my birth,
My shaping spirit of Imagination."

The creative act is in reality a spiritual act and Imagination is foundational to such an act. He places his entire trust in this power; and once it is lost, he feels that he has lost everything.

Prior to this *Ode* many a time did Coleridge talk about imagination. At times he spoke in the manner of the eighteenth Century thinkers, probably because he could not arrive at a concise and correct expression of its nature. Once he called it the faculty that enables us to enjoy, recall, or combine images. Another time he made it out to be the faculty at work in 'the fairy way of writing', a faculty that gives rise to delusions and preternatural visions. Both these views show the application of the associationist principle. As he said in 1797, it was a 'law of our nature' which makes us 'gradually represent as wholly alike' anything that is 'partially like'. In a letter to Poole, dated 16th March, 1801, he observes that after a period of 'most intense study' he has "not only completely extricated the notions of time and space but overthrown the doctrine of association as taught by Hartley, and with it all the irreligious metaphysics of modern infidels—especially the doctrine of necessity." A few days later he believed that he had exploded the fallacious foundations of Newtonial philosophy, and that as a result the mind is not "a lazy looker-on on an external world". And he proceeds to say : "if the mind be not passive, if it be indeed made in God's image. the Image of the Creator, there is ground for the suspicion that any system built on the passiveness of mind must be false as a system." "Even the socalled law of Nature", he says in Table Talk, "is not a physical thing after all." Then the mind is both passive and active: the past is its undercurrent and has a continuity. Memory is not a mechanical principle that links images, for it is the product of a "state of general feeling" resembling the past. Even in the present momentary sensation there is an immanent continuity: "How opposite to nature and the fact to talk of the 'one moment' of Hume, of our whole being an aggregate of successive single sensations! Who ever felt a single sensation? Is not every one at the same moment conscious that there coexist a thousand others; a darker shade, or less light?" Here is a power which is not only all-inclusive, but harmonising. It synthesises. But the unity that emerges is a creation of the mind, not the reproduction of the manifold given. By the end of 1803 he said, "I almost think that Ideas *never* recall Ideas—any more than leaves in a forest create each other's motion: the breeze it is that runs through them, it is the soul, the state of feeling." The basis of all mental experience is the wholeness and continuity in self-consciousness. The '*I* of every rational being', the will, is the single dynamic source. The will as a distinct volitional act, as a principle that resolves the conflicting impulses, is an element of the will conceived as the focus or expression of a unified self. As such he could say that motives are only 'my impelling thoughts', while a thought is 'another word for *I thinking*'. In other words, association of ideas implies the indolence of will which is the root of all evil. This associationism is at the basis of his idea of fancy; and fancy, he said, can convert even 'misfortunes' into 'dreams of happiness'.

But imagination is incapable of acting on any misfortune. It is a power that operates on joy and from a very early date Coleridge was aware of it as the shaping power. Even in 1794 in the *Lines on A Friend* he observes:

> "To me hath Heaven with bounteous hand assign'd
> Energic Reason and *a shaping mind.*"

In his *Sonnet to Sheridan* of January 29, 1795, he speaks of the *shaping hour* of his soul. The afflictions or, as he said in the original draft, the *ill tidings* do not allow him to soar in an ecstasy. Each item of the bad news is a visitation, for it haunts him like a ghost. When he is thus haunted, he is incapacitated like his *Christabel*. He may dream, but he cannot tell; he cannot give a proper form to his dreams for the simple reason that the ill tidings evoke his reason and understanding. These two are by their very nature incapable of taking him to an inner world of music.

In his endeavour to make this clearer he distinguishes reason from understanding. Reason comprehends the eternal, absolute ideas ; and in practical life it appears as a form of conscience. The understanding records and classifies the impressions of sense, and it is revealed as a form of prudence in practical life. This understaning, he argues, should work under the control of reason and with the active aid of imagination, for it is only imagination that can mediate between them. This 'shaping spirit' is then neither passive nor an associationist link. It is an element of the Poet's really living feelings and emotions. It is, as he told Southey "the modifying and coadunating faculty." This state is a continuous stream carrying the past within it. As he said, "to carry on the feelings of childhood into the powers of manhood—that is the character and privilege of genius". The *Dejection* implies that this faculty of imagination springs from a state of joy or ecstasy which does enable the poet to see and to feel the beauty of the world, and also to create forms of the Beautiful.

The suspension of this gift forces him to take recourse to 'abstruse research' with a hope that reason may reveal to him those absolute and eternal values which imagination has been presenting. Just like the imagination, reason too, he hopes, may infect his whole being. 'And now', he consoles himself by the make-belief that this "is almost grown the habit of my soul". Thus drifting along he indulges in a series of shifting attitudes.

17. This thought in the original draft gradually took him to take refuge in a solipsism outlined in the fourth and fifth stanzas. Even before he came to these verses, and after the third stanza, in his mind, he rambles on to Sara and to his sad resignation. And he speculates about a probable mishap befalling Sara. The very idea of such a mishap is revolting and he recoils with instinctive dread :

> "Hence, viper thoughts, that coil around my mind,
> Reality's dark stream !
> I turn from you."

This is a dark 'distressful dream', as he said in the first draft ; and he would turn away from such a speculation. In the revision the recoiling is from the thoughts that are likened to a viper. Christabel too recoils in a similar way ; and like her Coleridge's mind was haunted by 'dark distressful dream'. It is out of this supernatural or super-sensuous world that the gusts and slant night-showers came and moved Coleridge. He retains his passionate impulse for nature, but the nature he talks about has only a poetic or only a psychic

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character because it is created by the shaping spirit. He noticed the gathering storm in the beginning, and now he finds a relief in the world he has fashioned inspite of himself. He addresses the

"Wind, that rav'sh without,
Bare crag, or mountain-tairn, or blasted tree,
Or pine-grove whither woodman never clomb,
Or lonely house, long held the witches' home.
Methinks were fitter instruments for thee."

It is a wind blowing at night in a mountainous country. In the world of poetry too the wind is raving 'a scream of agony' ; and this scream is 'by torture lengthened out'. It is no longer 'a soft floating witchery of sound as twilight Elfins make'. The 'one intellectual breeze' has now become the 'mad Lutanist', reminding us of his own *Aeolian Harp*. It is no other than the poetic inspiration that is running wild. It is an inspiration that is now behaving like an

"Actor, perfect in all tragic wounds !"

This perfection in the tragic sound is attempted in the *Ode*. In thus attempting Coleridge slowly passes to an identification or oneness with the wind whom he now addresses as the poet :

"Thou mighty Poet, e'en to frenzy"

The external poet too is singing. He would like to know whether his song agrees with the song of the wind, whether the basic rhythm in both the creations is tragic:

"What tell'st thou now about?
'Tis of the rushing of an host in rout,
With groans, of trampled men, with smarting wounds—
At once they groan with pain, and shudder with the
cold !"

The smarting wounds and pain, the shuddering, and the groans are both physical and spiritual. Though the wind is raving about these like the poet himself, he finds after a moment that 'it is hushed', and 'there is a trance of deepest silence'. The sound, groans, and tremulous shudderings are all over. They cannot last long. So the wind, like the psyche of Coleridge, sings a new tune, 'another tale'. This time they give 'sounds less deep and loud'. It may be

"A tale of less affright,
And tempered with delight,
As Otway's self had framed the tender lay."

While discussing the distinction of fancy and imagination in the *Biographia*, Coleridge brings in Otway to represent fancy as against Shakespeare embodying the activity of imagination (B.L. I. 62). Then these lines can mean that he will have his refuge in 'fancy'. This last line in the original draft was worded—

"As William's self had made the tender lay."

It is a referencet o Wordsworth's *Lucy Gray* or *Solitude* which presents the tale

"Of a little child
Upon a heathy wild
Not far from home ; but it hath lost its way—
And now moans low, in utter grief and fear ;
And now screams loud, and hopes to make its mother *hear*."

It was on the first of February, 1801, that Coleridge wrote to Thomas Poole: "O, my dear friend! that you were with me by the fireside of my study here, that I might talk it over with you to the tune of this night wind that pipes its thin doleful climbing sinking notes like a child that has lost its way and is crying aloud, half in grief and half in the hope to be heard by its mother." It is in the wind that he hears Wordsworth's poem where *grief* and *hope* are together present in the same situation. In his dejection too Coleridge is trying to move within these twin poles of human nature and poesy. And he hopes:

"May this storm be but a mountain-birth",

which is the birth of poetry. And as for Sara he fervently wishes:

"Joy lift her spirit, joy attune her voice ;
To her may all things live, from pole to pole,
Their life the eddying of her living soul!"

The storm that has broken is to spare her and he is resigned to the 'thin doleful climbing sinking notes' of the wind of poesy. He is resigned because he has lost the power of will which is central to the imaginative activity. It is the conscious direction of the will that is the animating principle operating in and through the imaginative activity. It is then not the loss of the original gift of imagination that has brought about the mood of dejection. It is in reality the suspension of the activity of the 'shaping spirit of imagination', a suspension that is brought forth by his own will, that has shaped the dejection. The imagintion is there in the *Ode*. Only it is not regulated by the will.

SOME GEOGRAPHICAL AND HISTORICAL FACTS ABOUT SWITZERLAND,

DR. MISS INDIRA SARKAR

GEOGRAPHICAL FACTS

Switzerland is very conveniently situated in the heart of Europe and she is surrounded on all sides by natural boundaries like the Rhine on the north, the Jura Mountains on the west and to the south and the east we have the Alps. This little country has no coast-line at all and has never owned a navy. Four great powers are her immediate neighbours, *viz.*, France on the west, Germany on the north, Austria on the east and Italy on the south. On account of her particular situation the economic and political conditions have developed on special lines.

Switzerland is one of the smallest countries in Europe covering an area of only 16,000 square miles. According to statistics made in 1942, the population of Switzerland totalled about 4,300,200. The whole of Switzerland is not productive, only 77.15% falls under this category and 22.56% is composed of untilled land. It has quite a number of big cities like Zurich with a population of 251,000, Basel with 166,000, Bern the Federal Capital with a population of 135,000, Geneva has 134,000 inhabitants, Lausanne has 99,000, St. Gallen 63,000, Winterthur 61,000 and Lucerne 57 000.

There are several languages spoken in Switzerland. German is spoken by 72.6% of the population, French by 20%, Italian by 5.2%, and Romansch, a very ancient Rhaecto-Roman dialect by 0.4% of Swiss citizens. The Swiss belong to different creeds. About 58% profess the Protestant faith, Roman Catholics constitute about 41% and 1% only belong to other denominations. This diversity has not led to any discord. On the other hand, every Swiss respects the creed of the other and has formed one political entity solving the problem of nationalities.

HISTORICAL FACTS

Switzerland was originally inhabited by the Helvetii or Helvetic Celtic. Their territory was overrun by the Romans and became a part of the Holy Roman Empire. Many invasions took place from outside, the most important being the German tribes, who frequently invaded Switzerland. The Burgandians, on the other hand, also attacked and conquered some parts of the West of the country bordering France. The Roman culture was absorbed to some extent by the new conquerors. Thus we see that already in the Middle Ages linguistic differences existed and they began to get stabilised. The House of the Habsburgs ruled large territories of the country forming the centre of Switzerland today. These territories ruled by foreign powers were a great obstacle in the advancement and struggle for liberty. They were the Cantons of Uri, Schwyz and Unterwalden, all situated along the Lake of Lucerne. This was the nucleus from which ultimately emerged the Swiss Confederation. Three primitive Alpine cantons formed a league which was confirmed by a pact in 1291. Other Cantons also joined later on which included rural communities with autonomous rights By the beginning of the 16th century the Confederation comprised 13 autonomous Cantons. The Confederation opposed attacks coming from Austria and Burgandy and other foreign powers. Switzerland realised that due to these perpetual attacks she was unable to devote sufficient time, energy and money to the economic and social development of the country. Being a small land, it was being attacked by greater powers, who wanted to swallow it up. So in the 16th century the Confederation adopted a policy of permanent neutrality and abandoned all thoughts of territorial expansion. During the years of peace that followed she was able to develop herself in a most remarkable manner. The religious struggles of the Reformation did not break up the Confederation and Switzerland was then spared the horrors of the Thirty Years War. By the Treaty of Westphalia in 1648, she severed all connections with the Holy Roman Empire. From now on she was recognised as a sovereign state.

The French Constitution had the effect of introducing certain reforms. From a Confederation of States it was transformed into a Federal State which was sanctioned by the Federal Constitution of 1848 and again confirmed by the later Constitution of 1874. The Swiss Confederation is composed of 22 Cantons which enjoy full autonomy without restrictions from the Federal Constitution. The Federal Government has prerogatives however, in the following domains :—in international relations, the army, the code of law, customs, currency problems, General Post Office, telegrams, telephones, etc.

The Federal Assembly consists of two councils, the National council and the Council of State. The members of the former are elected directly by the people, one member for every 22,000 inhabitants and the council of State is composed of two delegates per Canton. The members of the two councils have similar rights but they hold their sessions separately. The Federal Council wields executive power. It is composed of 7 members who are nominated for a period of 4 years by the Federal Assembly. They may get re-elected after their tenure of service. They also nominate the President who is selected from the Federal Council. The Federal Tribunal constitutes the Supreme Court of Appeal. By the terms of the Constitution great democratic freedom is granted to the people of Switzerland. They enjoy the right of initiating legislation. A new law can be introduced if 50,000 signatures are obtained from the people. They also have the right to demand a referendum, *i. e.*, a law passed by Parliament must be submitted to public vote consisting of 30,000 signatures.

Every Swiss citizen who is physically fit must serve in the army according to the militia system of the military organisation. At the age of 20 every young man must undergo the few month's training in the army and after that he is called up every year for three weeks to the army to keep in training. In the event of war, Switzerland can mobilise about 900,000 men and women including the auxiliary services. Every man receives his personal kit and full equipment free of cost and they remain in his possession for the rest of his life.

It is on account of the neutrality of Switzerland she was able to become the organiser of the International Red Cross Committee and other international institutions and a sanctuary for refugees of all nationalities. Switzerland is also interested in international labour legislation being herself an industrial country and this is being done through the International Labour Office in Geneva.

Switzerland has a very highly advanced educational system. Apart from the seven Universities there are evening schools, literary, cultural, musical and artistic societies in every town. There are many private and official foundations that help to promote science, literature and fine arts. These organisations grant scholarships and awards to deserving candidates for research-work in various fields.

The press too is very efficient and there are a large number of newspapers and journals published regularly in its national languages.

CAUSALITY—HUME AND KANT

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It has been traditionally believed that the cause has some 'power' or 'energy' to produce its effect and that there is a necessary connection between an effect and its cause.

It is in Hume that we find a bold attempt of protest. Kant tries to meet Hume in his denial of necessary connection in causation.

In this present paper we shall try to show the futility of the Kantian approach.

Kant points out some flaws in the Humean analysis of necessity.

The grounds on which Hume denies necessity in causation are mainly three,

(a) The past is no guarantee for the future. Fire burnt in the past, but there is no necessity that it will do so in the future. So there is no necessity that the cause will always produce the intended effect.

(b) That proposition is necessary, the opposite of which is inconceivable. The causal propositions are not necessary, because their opposites are not inconceivable. We can conceive (without any logical contradiction) that fire will not burn.

(c) Causal propositions are synthetic and are derived from experience. Synthetic propositions are not necessary and whatever is derived from experience is contingent.

Therefore, Hume concludes, there is no necessary connection between the cause and its effect.

Kant attempts to restore this necessary connection.

He establishes it in the light of irreversibility of connection. He distinguishes between two types of connection among things :—reversible and irreversible, and he believes that the relation between the cause and its effect belongs to the latter type of connection.

He illustrates these two types by referring to the case of (1) a building and (b) the movement of a boat downstream. We can look at a building either from its foundation up to the roof, or from the roof down to its foundation. We perceive the house successively, but the the parts perceived are not themselves successive, but co-existent. This represents, according to Kant, reversible succession because the order of successive perception can be reversed. Such a succession, Kant calls 'subjective' because it is a case of succession of perception and not of objects. In the second place the successive movements of a boat are objectively succeeding and accordingly irreversible. One cannot perceive the movements of the boat according to one's will. So subjective succession which is not accompanied by a succession in the objects is reversible, and objective succession which is a succession of the objects themselves are irreversible.

Causality, according to Kant, is a case of such an objective succession of events which is irreversible. Since it is irreversible, it is necessary.

In this way Kant attempts to establish necessary connection in causation.

Kant says that there is a rule determining the succession of events when it is objective and irreversible.

The rule determines the 'being' of every event by making it conditioned by what precedes it, with the result that it cannot come into being unless the "precedent" already takes place. Such a rule, Kant holds, is the rule of causality.

This is, in short, Kant's argument for establishing 'necessity' in causality. This 'rule' determines the necessary sequence in causation and makes it irreversible.

In the second place, Kant will rejoin that propositions stating causal connections are not wholly derived from experience. 'Causality' is a 'Category' (of the mind) which is presupposed by experience. It is a particular 'way' of synthesising the raw materials of experience. Causal connections cannot be contributions of 'sense' because of its limited capacity. It is the work of the understanding which thus makes experience possible by its causal synthesis. Thus experience pesupposes the law (the law of causality) which determines the succession of events. So 'necessity' must be granted in causality. That which is derived from experience may be contingent; but causation is not empirically derived.

In the third place, Kant will retort that 'necessity' implies 'objectivity' of events. And 'objectivity' in this context, accounts for the genuine universal validity of causal relations. The succession being necessary is objective and being objective must be universally valid. Universality, according to Kant implies necessity plus objectivity.[1]

Kant's arguments have, no doubt, inestimable value, but considered as 'replies' to Hume's theory their value is of questionable importance.

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[1] 'Objectivity', it must be granted, is not a necessary ingradient of universality in Kantian philosophy.

We propose to adduce the following observations against the cogency of the arguments of Kant.

It seems that Kant defines 'necessity' in terms of 'irreversibility of connection' but Hume defines it in terms of 'universality of connection'. Therefore, there is no point in saying that Kant replies Hume. Let us take an example. "Heat expands bodies" is a case of causation, because 'Heat' is taken to be the cause of the expansion of bodies. It is also granted that there is a succession between these two events. Hume 'argues' that there is no guarantee that Heat will always expand bodies; Kant 'replies' that the sequence between 'Heat' and 'expansion of bodies' will be irreversible always. This is a reply which seems to have no connection with the argument. In fact, the irreversibility of connection Hume does not deny. Hume does not mean that in future 'expansion of bodies' will be the cause of 'heat', that one will come earlier than the other, that the connection will be reversible. He only means that Heat may not expand bodies, something else may do. Hume will never deny that in any case of causation there will be a rule determining the succession of events. He will agree that the cause will always precede, that what will precede will be called 'cause' of what will follow. He only denies that a particular 'cause' may not precede a particular 'effect' in future. And this point seems to be overlooked by Kant. Kant says that an event is determined by its preceding event. This will be accepted also by Hume. He only denies that the particular event may not be always determined by the same old particular preceding event. Hume will not deny that the causal sequence is irreversible. He will only deny that irreversibility constitutes uniformity (universality) of relation. He will deny that since the relation between a cause and its effect is irreversible, the same cause will always produce the same effect.

Secondly, Kant replies that the category of causality is presupposed by experience and what is prior to experience is necessary instead of being contingent. But, again, it seems that Kant misses the real point at issue. Two things are involved here ;—(a) Causality by a category and (b) Causality as facts of occurrance. The Judgment that "Heat is the cause of expansion" may require the category of causality. But the fact of expansion on account of the application of heat is not necessarily a case of Judgment and as such does not presuppose the category in the sense in which Kant uses the term. Hume says that we apply the term 'cause' to a succession (of events) which is very rapid and refers to contiguous events. The category of causality is necessary because without it no Judgment concerning cause and affect is possible. All that such an argument can prove is the necessity of the applicability of the category of causality. But Hume denies that a causal Judgment itself is necessary, that it will hold good always. The category of causality may be a presupposition of experience, but it is very difficult for us to follow how heat expanding bodies can be apprehended as prior to experience. The debate on this point seems to turn out to be a verbal quibble. Kant seems to have failed to improve the situation by introducing the new term 'category'. It is only a linguistic metaphor having no direct concern with the point at issue. Hume is more interested in the facts of occurrence ; Kant is more interested in framing Judgments with the help of categories. And a necessary connection between the two can easily be doubted.[1] Hume says that the causal propositions are synthetic ; Kant says that they are analytic. Plurality of effects is an argument in favour of Hume, and plurality of causes is an argument against Kant.

In the third place, Kant attempts to restore universality in causation by drawing our attention to objectivity and necessity. We reply that necessity is not yet sufficiently established and objectivity does not always prove universality. The greatest mystery seems to be in the Kantian concept of 'objectivity'. Kant does not clear out his intention in this connection. Owing to the inherent ambiguity in this concept, we are unable to count the merit of this particular argument. In fact, whatever is 'extramental' is commonly believed to be 'objective' ; but so many extramental things or connection amongst things are there which betray our future expectation. Hence, objectivity may not be regarded as successfully accounting for universality.

Hume denies necessary connection, because he does not find any justification for our belief in causal uniformity. He says that we only expect the past cases of causation to repeat in future ; but there is no rational basis of such an expectation. Kant fails to meet Hume because he does not attempt to establish our belief in the uniformity of Nature (causal) which precisely is Hume's point in terms of 'necessary connection'.

The 'irreversibility of connection' which Kant takes so much pains to establish is not the main issue.

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[1] We propose to subscribe to the Realists' theory of knowledge.

EDUCATION AND THE AGGREGATION OF INTELLECTUAL MATERIALS

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Thinkers in ancient times were of distinct opinion that contemplation in solitude was indispensable for the development of concepts and theories. The idea is basically true because philosphical thoughts and concepts are the products of co-ordination of elements not only from various branches of knowledge but also from various phases of human experience. The very process of analysing and sifting materials from the point of view of their suitablity and cogency for co ordination, from an extensive field of human knowledge and experience is a tremendous task which requires high qualities of the mind. The fact that the wider the knowledge from widely different subjects one possesses the better is one able to co-ordinate ideas, concepts and theories, augments the importance of contemplation in the field of Philosophy. The co-ordination of big units of ideas from fragments of several or many small units is a common-place activity of the mind of man ; it is the process by which all intellectual ideas, concepts and theories belonging to all the different branches of human knowledge have been brought into being. The difference between Philosophy and other subjects is that Philosophy does not limit itself to select materials from any particular subject ; it readily accepts reports from all the subjects known to man. Naturally the concepts, ideas and theories co-ordinated for Philosophy are much wider from the point of view of their ranges, and much more far-reaching from the point of view of finality compared to those co-ordinated in other subjects. Truth, reality, finality or universality is always the ideal and standard which the Philosopher struggles to attain in connection with the co-ordination of all his ideas and concepts. There is another reason why contemplation helps the Philosopher to form his ideas. Contemplation invites intuition which often helps man to arrive at definite conclusions. Intuitions can often appear all on a sudden with ready solutions of complicated problems because these solutions are after all, the products of co-ordination in the unconscious mind of man. Man is not conscious of the processes of co-ordination, which take place in his unconscious mind ; but the ultimate results of co-ordination may appear subsequently in his conscious mind in a flash. Beargson's concept of intuition, however, is entirely different from the one we have in our mind here.

Philosophy originally grew in response to forms of serious questions asked in connection with objects and entities which seemed to be inexplicable in the life of man. Questions even today, seem to be the most important factors in the path of man's progress. The developmental march of Philosophy does not depend upon the number of ultimate solutions of the most important questions of life, for it is not really possible to reach at anytime, the goal that will remain final for all the time to come; it depends upon the opening up of numbers of new, better and profounder questions from out of the materials deposited during the continuity of a system of Philosophy. Philosophy which works as a process for the development of human thought, really consists in the ability to pose fresh and problematic questions and to make serious attempts to solve them. This is how the impact of Philosophy has told upon the mind of man. The Philosopher continues with his thinking process because of the immense pleasure he derives from it; Philosophy is pleasing because it is *beautiful* to him. It is ultimately the sense of beauty that goads the Philosopher to take to his pursuit. And as beauty for him resides in processes and activities the Philosopher is virtually interested in everything that exists.

Metaphysics which is undoubtedly the most fundamental branch of Philosophy is an organisation of thoughts and concepts built up by the process of mental co-ordination of a high order of subtlety. It is the branch to which Aristotle naturally directed a great deal of his interest and attention. Problems, notions and concepts of Metaphysics are so very basic that they lead human thoughts towards finality and ultimate considerations. The leading questions in response to which the contents of the body of metaphysical thoughts have accumulated may roughly be grouped into a few broad sections. The most important of these are—What do we really mean when we say that a thing exists? Are there certain characteristic elements which are common to all existents? Are there in fact, different forms of existing? Can we classify all existents into certain categories? What is reality after all? What is the relation between reality and appearance?

Considerations of existents and reality are the central thoughts of Metaphysics. And it is profoundly interesting to note that not only the working of the process of mental co-ordination but also the utilization of various minor concepts of co-ordination are responsible for the development of those thoughts and ideas which are necessary for the solution of metaphysical problems. Reality was a sort of unity according to some, and a kind of aggregation of certain entities according to others. To Hegel reality was a unity of thoughts but Bradley thought it was a unity of experiences and feelings. Reality according to Leibnitz was an aggregation of souls which he termed monads. But according to Berkeley reality consisted of ideas in the mind of God. Plato, however, had insisted that reality contained in the community of ideas. What was real to Plato was not the familiar world of material objects the impressions of which we seize with our sense-organs but the world of ideas which we can mentally construct. But Plato's *ideas* were neither mental nor material. They subsisted; and in fact they were the archetypes from which the entire world had been constructed, he suggested.

The fact that these Philosophers considered ultimate reality either as a unity or as an association of individual entities is an indication of the supreme importance of the concept of co-ordination; both the concepts of unity and association insinuates the presence of the spirit of co-ordination. The concept of the categories of existents, which seeks to arrive at the fundamental classes of things that exist requires a thorough mental analysis of all the material bodies of the world for sifting their characteristics and forming certain groups by making a basis upon the nature of these characteristics; the process by which the categories of existents were brought into being was a typical process of co-ordination.

Aristotle depended upon the distinction between subjects and predicates for answering the fundamental question as to the classes of the entities that existed. Although the classification which his concept insinuated did not go far in solving the major problem of the grouping of existents it incidentally opened up many new and interesting thoughts and ideas in the field of Philosophy. There were also others who wanted to solve the problem of existents in various other ways. The modern classification of the categories of existents postulated by Whitehead is a brilliant example of the indication of a serious search for the co-ordination of a suitable system; but his categories are not so simple as they should have been. With a view to making a set of categories which would be simple and at the same time all-inclusive I propose to suggest a group of three categories only. These are—(1) *Objects* which include all the material bodies of the universe, (2) *Forces and processes* which manifest themselves in various forms in life and Nature and (3) *Ideas* which include all abstract concepts such as whiteness, roundness, number, relation, ideals, laws, views, opinions, theories, notions and the like. The only defect from which the system suffers is that it is incredibly simple. Forces and processes are lively in Nature but ideas are solid realities in the life of man and his society. Ideas and mental entities in the shape of love, patriotism and inspiration in the life of man are really as good as forces. The urge of life to effect countless forms of co-ordinations is after all a force in which are embedded the tendencies of the biological processes of life. A process is the dynamic aspect of a force; and a force is a force because of its capacity to take to certain processes. All biological processes naturally derive their functional lives and capacities from the basic force of life, which is *vital co-ordination.*

In connection with attempts to make bold speculations for organizing and co-ordinating metaphysical thoughts, ideas and concepts man came to feel that his power to comprehend the true nature of the universe and to arrive at ultimate truths regarding various ideas and notions that appeared in his mind, was limited. Naturally he, therefore, turned towards the mind which was responsible for the development of knowledge, for determining the nature of its functions, powers and limitations. The broad and fundamental questions that confronted him now were similar to the ones given here—

What is the real nature of knowledge? How does knowledge develop? In what way is the mind responsible for the development of the type of knowledge man can have? How far can man extend his field of knowledge? Is it always necessary to depend upon experiences for the beginning of the development of knowledge? Or, is the construction of the mind such that it can operate to know the nature of things through reasons alone, without the necessity of experiences? And it seems that the entire body of literature of the branch of Philosophy, which is known as Epistemology grew in response to the struggle for finding out suitable answers of these and such-like questions. The nature of these inquiries clearly point out that the consideration of the mind or rather, the operational procedure of the mind is the chief concern of this branch of Philosophy.

Mind is not only the co-ordinator of all knowledge, it is also the co-ordinator of the basic elements in the form of sense-perceptions which are the basis of knowledge and which are received from the outside world. Knowledge grows out of these basic elements. The process by which sensations are first converted into perceptions and then into conceptions and ultimately into thoughts and knowledge is in fact a process of co-ordination. The building-up of the successive organizational groups which are conversions is certainly effected by the synthetic power of co-ordination of the mind. The concept of *vital co-ordination* makes the entire process of the development of knowledge from the crudest elements of sensations, extremely clear to us. Kant's concept regarding the development of knowledge from sensations was similar in many respect, to the one we have expanded here. He even insinuated the presence of an active co-ordinating power of the mind for creating perceptions, conceptions and "categories" from sensations. No other Philosopher, not even Locke or Hume, had suggested the presence of any active element of the mind for converting sensations ultimately into ideas and thoughts. Kant however made his ideas extremely complex not only with the introduction of various terms and expressions especially coined by him but also by introducing his concepts of "Forms of Intuition" and "Categories". for explaining the procedure of the development of knowledge from the raw materials of sense-experience. The concept of vital co-ordination however, clarifies and explains the procedure so very simply and naturally that the idea of the usefulness of the concepts of "Forms of Intuition" and "categories" is completely removed from our minds. When the urge of co-ordination organizes sensations to form perceptions it also automatically co-ordinates perceptions with time and space. The urge proceeds then to build up perceptions first and then to form various other groups of co-ordinated units in gradual stages, which go to determine the formation of knowledge. Kant's "Forms of Intuition" and "categories" are really the names given to certain intermediate units in the process of the development of knowledge from sense-experiences ; the concepts of these intermediate units are not indispensable for the comprehension of the process. It is the co-ordinating power of the mind, which is responsible for the synthesis of knowledge from those impressions which come to man through the gateways of his sense-organs. And we shall discuss elsewhere the truth and validity of the idea that it is also the co-ordinating power of the mind, which is similarly responsible for the development and the accumulation of knowledge in the life of man and his society. But the co-ordinating power of the mind is a dynamic phase of the vital urge of co-ordination of life.

Of late there has been a tendency to consider Epistemology as a minor and unimportant branch of Philosophy ; but its unimportance here has been greatly compensated by an increase of its importance in the field of Education where the comprehension and the determination of the most effective process for the development and the accumulation of knowledge are vital.

As it is the characteristic of the mind to change, modify and co-ordinate sensei-mpressions received from the outer world, these impressions become different from the real objects which the mind seeks to know. The outer world to the mind, is as it is constructed by the mind to be. Reality, therefore, in its true form, can never be seized by the mind through experiences. But reason, intellect and intuition can help the mind to reach transcendental regions for the development of super-sensory experiences and the formation of ideas regarding objects and entities which cannot be comprehended through senses.

Although Metaphysics and Epistemology have helped the formation of all other branches of Philosophy and although both of them have their repercussions upon them all, the most precious gift of Philosophy to the culture of man is its branch which is known to us as Ethics. Ethics is valuable not only because it can hold out ideals and hopes for the development of superior living but because it has positively directed the course of the mental enrichment of man by putting an emphasis and importance upon the process of spiritualizing correct social relations and upon those actions and endeavours which go to develop his sense of dignified feelings.

Ethical concepts are co-ordinated units of useful ideas and thoughts that have grown mainly out of social conditions and considerations; the fundamental function of these concepts is to co-ordinate the life of man in his society in a worthy manner. This is how man tries to create social beauty and develop his tastes. Morality to Plato was the effective harmony of the whole. But justice also seeks to establish harmony in a similar manner. Do not morality and justice then serve to effect co-ordinations?

Ethics like Art, is a social acquisition; it needed, therefore, for its original beginning just those conditions which were indispensable for the growth of Art in human society. After the attainment of a considerable degree of security in his life, thanks mainly to social consolidation, primitive man became free to think of the ways and means which promised to bring happiness and contentment in his life. This was the stage in which man took to ethical concepts. Freedom and security thus, were the conditions which led to the origin of ethical ideas and thoughts; they were also the conditions which served to incubate the growth of these. Although the source of the inclination to co-ordinate ethical concepts was the basic urge of co-ordination the number of factors which directed man to take to this form of creations was considerable. There are ethical concepts which point neither to social participations nor to the consideration of consequences of actions for their origin; they grew out of superior and dignified feelings of man, which he experienced at the time of exalted moments of inspiration. Such moments of inspiration are not abnormal periods in the life of man; they are genuinely normal. Man is biologically meant for experiencing inspirations and their lifting effects which have goaded him to make his earnest attempts to create, reach or seize the highest forms of entities. Under the pressure of his inspirations man has been able not only to devise methods with the aid of which he has been able to guide his individual and social life in a superior and dignified way but also to construct the supreme concepts of truth, beauty and goodness, which have always been the source of all human ideals.

Althoug ethical ideas and ideals were first formed by the social mind of man they were properly organized and crystallized by Philosophers who embellished and perfected them in various degrees according to their individual capacities and powers of imagination. Aristotle was realistically simple and Spinoza pragmatically sound in their ideas and concepts in the field of Ethics; both of these Philosophers became famous for their views and organisational treatment of the subject of Ethics. Kant wanted to elevate all that stood for Ethics. He conceived the presence of a moral faculty of man, which he held, was innate. Man, he said, could not know reality with his mind, specially with the aid of his intellectual faculties but he could get a free access to reality through his moral faculty. Ethics was in this way, thought to contain certain eternal principles. Kant thus in an effective way, augmented the prestige of Ethics to a great extent. Side by side with various basic inclinations man feels also the pull of duty. In an indirect way the social sanction of duty becomes enormously significant to man. Man can do what he is inclined to do; he can also do what he ought to do. The presence of the *will* in man to exercise morality indicates that he is free.

Ethical concepts did not appear in the mind of man as idle imaginations; they appeared because they were necessary for man's life. The biological set-up of man demands that he should have certain concepts which can motivate him to proceed towards higher forms of life which would culminate in divinity. That this particular idea is true to facts is definitely proved when we find that moral and ethical ways of life are vitally necessary for the upkeep of the mental health of man. The condition which indicates the wholesomeness of the mind is its wholeness effected by its integration or proper co-ordination.

Despite the fact that all Philosophers did not write on Aesthetics it is now certain that many of them recorded their ideas directly or indirectly, regarding this branch of Philosophy in some form or other. And Philosophers who were profoundly inclined to expound Aesthetics wrote on various aspects of the subject and extended their thoughts to great lengths in search of ideas and facts to co-ordinate concepts suitable for the field of Aesthetics. What is beauty after all? It cannot be an independent principle, for the concept of beauty is known to vary from individual to individual. The factors of past experiences and the present stage of mental development go a long way in determining the concept of beauty of an individual and even of a social group. It is not difficult to see that symmetry, balance and harmony which are fundamental in the field of Art are only special forms of arrangements of co-ordinations of the elements which produce pleasing effects or beauty. But in reality a work of Art is not a material object; it is a symbol which stands for a world of entities which vary according to the mental make-up of the individual who looks at it.

Beauty is a mental creation; but this should never mean that it does not require certain fundamental aesthetic elements for its formation. An object of Art is beautiful because it embodies some of these elements. Art whether it is created with the aid of lines, colours, sounds, movements or other elements is beautiful; it is beautiful because it is pleasing. And it is pleasing because it can evoke our feelings of appreciation and admiration by causing us to recollect certain objects and thoughts which we love to contemplate. Beauty is a co-ordinated concept formed from the experiences of life; and it is a distinctly human possession. The relation between beauty and a work of Art which embodies it is naturally intimate. Art is attractive; to us it is beautiful because it can release various ideas, information, feelings, emotions and the like which once belonged to the artist. A good piece of Art makes one who contemplates it a creator for the time being because one then experiences just the feelings that once passed through the mind of the artist himself. It is the process of communication and comprehension that makes us happy when we look at a work of Art. But Art does not solely depend upon the elements that are thus communicated from the artist ; being suggestive it helps the observer either to remember from his past or to create such feelings and thoughts as are sources of joy to him.

To say that Art seeks to develop expressiveness is to indicate only a fraction of what it really wants to achieve. The development of expressiveness means the expansion of those elements which are hidden or half-hidden but which are in some form or other present there. Art tends to go beyond that ; it seeks to bring in, in addition to these, such imaginary elements as are or as can be naturally co-ordinated with it. Co-ordinativeness should be considered as the fundamental characteristic of Art. An object of Art is a symbolical representation of various objects and entities which evoke various kinds of feelings and emotions.

A work of Art which according to Aristotle aims at unity really embodies a subtle form of co-ordination of thoughts, ideas, emotions and feelings of various kinds. It is this co-ordinativeness which makes Art what it is ; co-ordinativeness I insist, is the soul of Art. It is also this co-ordinativeness in Art which makes it attractive to us. The lifting capacity of Art furthermore, owes its origin to its co-ordinativeness. When I look at a beautiful statue of the Buddha absorbed in deep meditation I greatly appreciate the craftsmanship of the sculptor for the effective creation of a poise of supreme calmness and serenity on the face of the statue. My thoughts are naturally directed towards the considerations of the sculptor and his marvellous skill in effecting such a creation. I look at the piece of work again and again, and think of the physical perfection of the statute containing a high degree of grace, balance and harmony. I am led soon to think of the various phases of the life of the Buddha as to how a prince thought it fit to set light to the world and sacrificed all considerations of his boundless luxury for finding out a method that would bring about the salvation of man and free him from his bondage. Thoughts similar to these came to my mind one after another and the idea of the Buddha's struggle seem to loom large in my mind for the time being. But soon my imagination parts company with these thoughts and carries me to even profounder aspects of human life. I think of the tragedies and frailties of human life ; I am perplexed. But suddenly my imagination takes wings and leads me to another sphere. I now think of the eternal struggle of man for achieving his salvation and freedom ; and I also think of his hopes and aspirations. Life is a struggle ; but it is a struggle for achievements. All these ideas and many more appear in my mind not without reasons ; they appear because thoughts similar to these once passed through the mind of this great friend of mankind, whose statue I happen to contemplate. In my imagination I create a world of my own and as all these thoughts are naturally associated with tender and spiritual feelings of joy and sweet sorrow they make me more and more contemplative and happy. And when I thus, become a part of the visionary situation I enjoy the characteristic gifts of Art.

Imagination certainly plays a vital role in the field of Art. But Croce's suggestion to the effect that images are the only wealth of Art can never be accepted as correct. Images, only when they are co-ordinated with ideas, develop the true characteristics of Art. A faithful representation in lines and colours of an ugly or repugnant thing may be highly pleasing to us ; it may also be prized as a work of Art. The image of a repugnant object can win respect and reverence only because it embodies or co-ordinates an idea. The co-ordination of an idea thus can change our entire attitude towards an object or an entity.

We feel basically inclined to run away from a repugnant thing when it is true to life plainly because we cannot afford to associate our tender feelings and thoughts with it ; we cease to think of the object. But when we come to its image the feeling that it is not solidly and materially present encourages us not to avoid it. In our imagination, therefore, we take to ideas and thoughts that are naturally co-ordinated with the representation of the object. The image thus by becoming the centre of various kinds of ideas, thoughts and imaginations grow into Art. Art enshrines ideas, thoughts, imaginations and emotions by making them co-ordinated to it ; it can thus store a wide variety of ideas in co-ordinated forms for communication.

A preparation in the shape of an internal organization is generally necessary and in some cases indispensable for the creation of a work of Art. But to execute the creation in a material form after the mental preparation is an equally important artistic activity. Croce is not correct when he suggests that the formation of th internal concept of an entity before actually creating it is everything from the point of view of an artistic creation and that externalization is only a mechanical process.[1] Wide changes and modifications of the original internal image are almost always necessary for bringing a work of Art to its final stage of perfection. Is it not true that artists often begin with the creation of ordinary products which they embellish effectively and artistically only with prolonged application and experimentation? Is it not furthermore, true that some artists take to their creative activities without any conscious internal preparation, only to try their hands upon various themes one after another in the spirit of play and ultimately terminate their activities in the creation of a perfect piece of Art? To say that the process of external execution during the creation of an artistic object is not an aesthetic activity is to accept the idea of a limited scope of the manifestation of Art in the life of man.

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[1] Benedetto Croce, *Esthetic*, p. 50.

Art satisfies the desire for comprehension in man in a particular way. It supplies materials for comprehension in the form of the artist's personal vision ; and Art is great because it can communicate this vision. Also, because of its capacity to communicate, it not only expands certain normal experiences of man but can extend certain new types of experiences which are necessary for his proper development.

An object of Art is pleasing because it embodies beauty. And beauty is the element that invites our attention and compells us to consider the object or entity containing it ; more fundamentally it is an invitation for making co-ordinations. Although there are things that are considered beautiful by all, the concept of beauty varies. Basically beauty is directly or indirectly associated with the instinctive urges of man. But with the development of intellect, culture and taste it has invaded all the fields of human thought and endeavour. Just as everybody has a philosphy of life of his own, every individual possesses his own concept of beauty. Primitive men of certain stages of development find beauty in grotesque figures and forms ; it is for beauty that head-hunters decorate their huts with the skulls of human-beings which they themselves have killed. But people belonging to the highest stages of human culture find beauty in noble actions and sublime thoughts and ideas. It is the motivation of beauty which has always induced individuals, tribes and nations to take to different forms of creative pursuits and activities. One of the greatest artists of the world candidly suggests that if he has to choose between truth and beauty he would certainly prefer beauty.[2] A famous Mathematician says that Scientists study Nature not because it is useful but because it is beautiful and that human life would not have been worth living at all if Nature had not been beautiful.[3] The guiding force in the life of Einstein, which urged him to take to his scientific pursuit seemed to be his own concept of an exceedingly high form of beauty.[4]

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[2] Anatole France, *On Life and Letters*, p. 113.

[3] Poincare, *Value of Science*.

Einstein conceives of the presence of "pre-destined harmonies" in the universe, which both artists and scientists try to reveal and comprehend with the aid of their own activities. The beauty of which these leaders of human thoughts speak and insinuate is intellectual beauty ; but it is beauty all the same.

The pursuit of intellectual beauty can change the character of the life of man ; it can refine his intelligence and make his life nobler and really divine. To get a glimpse of the unimaginable and eternal beauty which is at the back of all the forces and phenomena of the universe has always been the quest and concern of man. Intellectual beauty which is a co-ordination of man's knowledge, vision and intelligence is a broken part of this eternal beauty ; it draws its subsistence and inspiration from the insinuations of the presence of the highest form of eternal beauty in the universe.

To banish Art from the life of man is to drag man to the level of the brute. This is particularly true because Art and the life of man are intimately related ; the chief charachteristics of Art are similar to those of the life of man.

The remaining branch of Philosophy, which deals in Politics is now rightly considered as a part of Sociology. The germ of the social is in the individual. Individuals come together, under the pressure of vital co-ordination of life, to form societies. All forms of social behaviours and manifestations accrue from the vital urge. The urge of co-ordination of life is profoundly inclined to manifest itself in a special form which appears as the social in the individual. The drive for effecting social co-ordinations may be both conscious and unconscious ; and the presence of various patterns of social behaviour, which are biologically fixed notably in certain insects, goes to indicate that the urge comes from life itself.

Philosophers from the earliest times have been trying to find out the best form of Government for the social life of man. Plato's ideas regarding this topic are still invaluable. He wanted Philosophers to be at the heads of Governments. But practical Politicians who run Governments think on the contrary, that a knowledge of Realpolitik, and not of Philosophy, is indispensably necessary for Politicians. Contents of Realpolitik and Philosophy are widely different ;

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[4] Einstein, *The World as I see it.*
Also, *vide* J. W. N. Sullivan, *Limitations of Science*, p. 217.

they often arrive at contradictory opinions regarding ideas and concepts of human values. Forms of Government have often been detrimental to the interest of human progress and civilization. Democracy is undoubtedly the best form of Government man can build up. But man must first reach a stage of social progress for being able to reap its benefits. Democracy after all is a way of living and as such it needs for its smooth working the effects of good education and training. And from another point of view, the concept of democracy is sufficiently intellectual for being commonly misunderstood. The equality which democracy rightly demands is an equality of opportunities and chances for all. It does not at all profess an equality of merits in persons. Individuals in Nature are naturally different; and any concept of equality of unequals is incongruous.

Government grew out of social needs and its functions are social in nature. And although Government was originally framed for taking control of society for its healthy growth it has incidentally developed various forms of social blemishes. It has grown exceedingly artificial mainly from the point of view of real society ; and because of its artificiality and unnaturalness it has become a bad substitute for natural society. But the most unworthy trait of all governmental organizations is the negative form of punishment with which they all try to establish discipline for controlling social groups. Knowledge of Sociology and Education will definitely help man to shape the structure of the form of Government which is suitable for his social and individual need.

ANCIENT INDIAN EXPERIMENT IN REPUBLICANISM

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The prevailing note of Hindu polity as it developed in the Vedic period (C. 2000—1000 B.C.) was 'Territorial monarchy'—very often hereditary in character. It was obviously one man rule with a council of Elders (Sabhā) and an assembly of the people (Samiti), and not republicanism. The Aitareya Brāhmaṇa[1] refers to various kinds of rulership—Rājya, Svarājya, Bhaurājya, Vairājya, Mahā-rājya and Sāmrājya. These, however, do not appear to be the different varieties of monarchy nor is it always possible to determine their real characters as opinions differ. The Rāmāyaṇa (II. 67) and the Mahābhārata (XII. 67) are fully conscious of the calamities that would befall a kingdom without a king. They evidently advocate monarchy as a form of government. Monarchy was the normal type of government but not the only type known to ancient India. The existence of non-monarchical states variously called Gaṇa States, aristocracies and democracies cannot be altogether ruled out at least in the later Vedic period. Dr. K. P. Jayaswal[2] who made a scholarly study of political institutions takes the Uttara Madras and the Uttara Kurus to be republican states, *i.e.*, Vairājyas. The seasoned historian Dr. R. C. Majumdar[3] finds in one passage of the Atharvaveda (V. 18—10) a clear reference to the existence of non-monarchical form of government in the Vedic period,—"They that ruled, a thousand, and were ten thousand, those Vaitahavyas, having devoured the cow of the Brāhmaṇas, perished." (Whitney's translation of the A.V. p. 261).

Buddhist and Jaina works record the existence of republics in Eastern India sometimes in profuse detail. Even now the existence of republics or kingless states or states with democratic constitutions—the Vairājya or Gaṇa-rājya of the Indian texts is doubled by some western scholars. The French savant Dr. Lowis Renon[4] observes,—"Much interest has been excited by the question whether there were or not republics in ancient India, and if so of what type. The texts are vague. Some theorists dwelt upon the word 'gaṇa' or again on 'Saṅgha' or 'Pūga' which mean 'group' with variable shades of significance. These terms seem to have designated sometimes clans of the tribal type, sometimes corporative bodies, and sometimes political oligarchies, as in the passage in the Mahābhārata (XII, 107)."

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[1] VII. 3. 14.
[2] Hindu Polity, I, pp. 90-91.
[3] Corporate Life in Ancient India,
[4] The Civilisation of Ancient India p. 95.

Prof. Rhys Davids[1] was the first to point out the existence of a number of non-monarchical states located in the eastern region. They were :—

(1) The Śākyas of Kapilavastu
(2) The Bhaggas of Sumsumaragiri
(3) The Bulis of Allakappa
(4) The Kālāmas of Kesaputra
(5) The Koliyas of Rāmagrāma
(6) The Mallas of Pāvā
(7) The Moriyas of Pipphalivana
(8) The Mallas of Kusinārā
(9) The Videhas of Mithilā } —The Vajjians
(10) The Licchavis of Vaiśāli }

Referring to the Śākya clan he writes,—"The administrative and political business of the clan was carried out in public assembly, to which young and old were alike present, in their common Moti Hall at Kapilavastu. It was at such a parliament or palaver, the King Paseudi's proposition was discussed. When Ambastha goes to Kapilavastu, he goes to the Moti Hall where Śākyas were then in session . . . . A single chief, how and for what period chosen, we do not know,—was elected as office-holder, presiding over the sessions, and if no sessions were sitting, over the state. He bore the title of rāja which must have meant something like the Roman Consul or the Greek archon."

Non-monarchical States or republics sometimes equated with oligarchies loom large in classical literature. The Graceo-Roman writers speak of Nysa, the Sabarcae, the Malloi, the Oxydrakai and the Sibis at the time of Alexander's invasion. M'crindle's[2] contention that autonomous states described by the Greek writers refer to village communities has been ably refuted by Dr. Aitekar[3] on the ground that those writers had little knowledge of village life or village government.

[1] Buddhist India (Indian edition), p. 16.
[2] Invasion of India by Alexander, p. 115. n. 2.
[3] The State and Govt. in Ancient, India p. 73.

Ancient India, it must be admitted, was not like ancient Greece the home of republics. Monarchic tradition had a firmer hold on her people. But there is no denying the fact that from time to time republican experiments were made. These unfortunately did not last to form a permanent or pleasing feature in the evolution of the country's political organisation. Dr. R. C. Majumdar who wrote a valuable book as far back as 1918 admirably adduced weighty literary evidence, and where possible numismatic and epigraphic as well, to show ancient India's experiments in democratic forms of government or in other words her role in corporate activities in political life.

If by a republic or a commonwealth is meant a state in which the sovereign power is vested not in a single person but in all persons or a group of persons, ancient India had certainly the experience, however fitful, of that type of government, not once but twice in her long and complicated history. Dr. Altekar has described ancient Indian gaṇa States "as republics in the same sense in which the ancient States of Greece and Rome were given that designation."

Taking ancient India as a whole, we might recognise two great ages of republican experiment. The first phase extends roughly from C. 700 to 500 B.C. and the area over which republics flourished was both N.W. and N.E. India. The second phase extends from C. 200 B.C. to 400 A.D., and surprisingly enough the same regions again became the seat of kingless states. The first group of republics referred to by Jaina and Buddhist works and classical authors showed signs of decay with the rising tide of imperialism as a political force. The establishment of the Saiśunāga dynasty under Bimbisāra (C. 545-44 B.C.) synchronised with the period of Magadhan expansion. It was marked everywhere by a change-over from 'national monarchis' (Janarājyas of the Satapatha Brāhmaṇa) to non-national territorial ones. The boundaries of kingdoms became fixed and the powers and functions of rulers were seemingly on the increase. Inspite of the fact that Kautilya [1] devoted a whole Chapter to Sanghas or Corporations and stated that sovereignty might be the property of a clan, he was no advocate of republicanism. He laid down a lot of measures to break the power of the gaṇas or Sanghas just to exalt the power of the monarch. His ideal was a strong centralised monarchy with emphasis on just exercise of royal authority and maintenance of the social order.

The second group of republics that cropped up in the period between 200 B.C. and 400 A.D. and included the Arjunāyanas of the Agra-Jaipur region, the Yaudheyas of the Panjab, the Madras of the Central Punjab, the Andhaka-Vrisṇis in Kathiawar and a number of gaṇa states mentioned in the Great Epic,[1] went down before the Gupta imperialism in Āryāvarta. Politically, the end of this period saw the simultaneous fall of the two ruling dynasties,—that of the Kuṣānas in the north and that of the Andhras or the Sātavāhanas in the South. From the fourth century A.D. when the Gupta empire brought about a sort of political unity in northern India to the downfall of the Hindu political system under the stress of Turkish aggression in the twelfth century, the republics did not play any useful part in Indian politics. The result was a revival and a revitalisation of monarchy both in the Ganges-Jamuna Valley and in the Deccan plateau. Neither the Purāṇas nor the Smṛiti works say anything about republican states in any part of this vast sub-continent. The Mahābhārata, a Smṛiti work per excellence, extols Daṇdanīti and describes how social welfare and human progress depends upon the rod of punishment wielded by the king. In Manusamhitā[2] monarchy appears to be the prevalent form of government. According to Manu, the law-giver, the king is the protector and leader of the state—the chief executive head,—the fountain of justice. His king is of the divine stock,—a naradevatā,—a god in human form.

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[1] Arthasastra, Shyama Sastris M. Bk XI. Chap. I.

The Kāmandikīyanīti and the Śukranīti,—two late works on state craft are silent about Indian republics. This leads us to the probable conclusion that in the period under review there was much adherence to monistic political discipline as opposed to pluralistic political one inherent in democracies. In ancient Greece monarchy gave way to aristocracy, which when degenerated into oligarchy, was replaced by tyranny before the advent of full-fledged democracy in Athens. In ancient India, on the other hand, aristocratic republics were crushed and pulverised by big empires, leaving no room for democracy to strike roots in the soil.

Let us now pass on to the consideration of causes leading to the disappearance of ancient Indian republics. One potent cause was, as most writers think, repeated foreign invasions,—the Persian and the Greek in the first period and the Śaka and the Kuṣāṇa in the second. Foreign invasions created the problem of defence and loyalty to powerful monarchies was considered a better means of security against such dangers. Political corporations, rent asunder by mutual jealousies and divergent ambitions were deemed an inappropriate machinery for the purpose. A second reason why the republican experiment failed was that these republics were greatly influenced by some particular tribe or members of particular caste. The Mālavas and the Yaudheyas were mainly Kṣatriyas The Vāṭadhānas and the Mādhyamakeyas were Brāhmaṇas and the Ābhīras on the bank of the Sarasvatī were Śūdras by caste.[1] Generally speaking they had their origin and death in clan consciousness or caste spirit. Dr. K. P. Jayaswal attributes their collapse to the Gupta imperialism when he says,—'Samudragupta, like Alexander, killed the force spirit of the country. He destroyed the Mālavas and the Yaudheyas, who were the nursery of freedom and many others of their class.' This view is not shared by all.[2] The rise of imperialist states,—the expansionism of the Mauryas and the Guptas and anxiety to prop up the social order must have dealt a severe blow to republicanism. The position has been correctly summed up by Dr. N. C. Banerjee[3] thus :—

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[1] The Santiparva (Chap. 81) mentions five republican peoples, *viz.*, the Andhakas, Vriṣṇis, Yādavas, Kukuras and Bhojas. The term "gana-raiya" occurs in Mabht. Chap. 107,

[2] Chap. VII. Sl. 41-46.

'Repeated turmoils helped the princes to consolidate personal sovereignty and to subvert the ancient democracies . . . . social complexities and religious upheavals destroyed the homogeneity of the people, loosened the bonds of the tribe, and made the task easy for the growth of pure monarchies. Sacerdotatism, also, viewed the problem of political discipline from the standpoint of cosmic order, and extolled the rising monarchical authority.'

A rapid survey of nineteen hundred years of ancient Indian history reveals the story of only a brief existence of republics on her soil with major preference for monarchism.

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[1] Dr. N. C. Banerjee—Hindu Polity and Political theories, p. 180.

[2] Majumdar and Altekar—A New History of the Indian people, Vol. VI., Chapter II. The Malavas, the Aryunāyanas etc. had only accepted in a general way the imperial position of Samudragupta. They paid tribute but retained autonomy.

[3] Hindu Polity and Political theories, p. 3.

DISCUSSION ON "A MODERN INCARNATION OF GOD"*

A. C. Das

My book *A Modern Incarnation of God*, which is a commentary on the life and teaching of Sri Ramakrishna, was reviewed in the May 1959 issue of *prabuddha Bharata*. I really have been encouraged by the reviewer's kind appreciation of the book, and have greatly benefited by the criticism of some of my views expressed therein.

In his criticism the reviewer says, "As however, we have not space enough to discuss each point, we shall simply quote the passages and leave them to the readers to judge for themselves. Words in brackets are ours, and doubtful words are italicized by us". Then he gives quite a list of statements from my book, indicating his doubts by italicizing the words he questions. Following his scheme, I put the statements in doubt serially below in one column, and their clarification in another opposite to the former.

Doubts	Clarification
1. 'His notes......he (Mahendra Gupta) *often* showed to the Master for *verification*' (p. vii).	Vide *Sri Sri Ramakrishna Kathāmrita* by "M", III, x, 5 (9th November, 1884); xix, 3.
2. 'Knowing that Christianity was a religion founded upon the conception of Jesus Christ as the Son or Incarnation of God, Swami Vivekananda was *shy* of presenting Sri Ramakrishna in the *proper light*' (p. x).	This is my view. I have dealt with the point in the preface in some detail. I think there is no trouble about the words "was shy of presenting" which by and large mean "avoided presenting". Readers of *The Complete Works of Swami Vivekananda* should note that whenever Swamiji spoke publicly on Sri Ramakrishna in America or Europe he only presented Sri Ramakrishna as *His Master*, although as a man of extraordinary intellectual and spiritual powers, never as an Incarnation of God in Sri Ramakrishna's sense, or which is the same thing, the *Gītā* sense.

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* The Editor of *Prabuddha Bharata* in his letter, dated July 30, 1959, to the author says, "Regarding publication of your "discussion" in P.B., we are sorry to say that we cannot afford space for discussion on reviews of books."

Vide *The Complete Works of Swami Vivekananda*, Vol. III, Advaita Ashrama, Mayavati, 6th edition, 1948, pp. 312-313; Vol. VII, 3rd edition, 1947, pp. 25-27, 56, 240-241, 399; Vivekananda: *My Master*.

3. 'Sri Krisṇa does not assert *absolute identity* between God and a human spirit in the state of perfection' (p. 51).

Vide the *Bhagavadgītā*, XV, 7, where Sri Krisṇa expressly says that a part of the divine Being is differentiated into individual selves that are in fact eternal.

Indeed the Infinite has no parts, and all that is meant is that the Divine differentiates Himself into individual selves, (although we do not know how), without being exhausted in them.

Again, in Chapter IV, 10, Sri Krisṇa says:

"Delivered from passion, fear and anger, absorbed in Me, taking refuge in Me, many purified by the austerity of wisdom, have attained to My state of being" (Radhakrishnan's translation).

It is to be noted that the attainment here does not mean the realization that a perfected individual self is identical with God.

Sri Krisṇa does not speak of any such identity even in the contexts where He refers to *Brahmanirvāṇa* (see V, 24, 25, 26). In couplet 24 it is said that a yogin who becomes inward, enjoying happiness, joy, and light within, attains to the state of bliss and freedom, being poised in the Imperishable. That the words "*Brahmanirvāṇa*" and *Brahmabhūta*" denote a positive state of spiritual experience, not merging or disappearing into *Brahman*, is shown by couplet 25 wherein it is pressed home that Rishis whose sins are destroyed attain to the state of beatitude in *Brahman*, and as a result of it they overcome their doubts, become serene in mind, and devote themselves to the well-being of all creatures.

One cannot interpret this couplet by saying that "the holy men whose sins are destroyed, whose doubts are cut asunder, whose minds are disciplined, and who rejoice in doing good to all creatures", attain to *Brahmanirvāṇa.* Should we, then, say that the holy men referred to above become *Brahman?* Becoming *Brahman,* if meaningful at all, means merging into *Brahman* without a trace of the individuality of the aspirant concerned. But this interpretation of couplet 25 contradicts couplet 24, in which it is said that one who withdraws into inner or inward consciousness eventually attains to *Brahmanirvāṇa.* So, in couplet 25, *Chinnadvaidhā Yatātmānaḥ sarvabhūtahite rataḥ* only expresses some effects of the attainment of *Brahmanirvāṇa.* Being poised in the Eternal, the sādhaka serves all creatures. Ascent to *Brahman* is followed by descent to the empirical world. Hence how can there be complete identity between *Brahman* and the individual self? In Chapter V, 20, Sri Krisna indeed says: "The Knower of *Brahman* is established in *Brahman*".

In Chapter VIII, Arjuna asks: "What is *Brahman?*" and Sri Krisna answers: "*Brahman* is that which is imperishable." In Chapter XV, again, He describes God as Purusottama, *i.e.* the supreme Being who is beyond the changeful and transcends the changeless in creating and sustaining the universe. In another context, Sri Krisna says that the devotee attains ultimate peace by knowing "the great Lord of all the worlds, who is the Friend of all beings" (V, 29).

4. 'At Anur......there was the *statue* of...... Bishalakshi . . . . . They worshipped the goddess in her *temple*' (p. 114).

Vide *Sri Sri Ramakrishna Līlāprasanga,* Vol. I, Udbodhan Office, 1362 B.S., Sādhakbhāva, pp. 48-50.

Therein Swami Saradananda, the author, says, "Uninhabited dilapidated buildings

	overgrown with jungles, old discarded temples, and platforms for Rāsha ceremonies, etc. evidence the fact that when Ramakrishna was a boy villages like and around Kamarpukur were densely populated and were much richer than they are now" (translation mine). The illustrious Swami means to say that there was a temple of Bishalakshi at Anur at that time. Again, he says, "That once there was a brick-built temple there is shown by the heap of rubbles on one side". And he continues, "Every year the cultivators put up a thatched cover overhead..................Later a rich man of a village built a temple (for Bishalakshi). All this shows clearly that there was an image of the goddess installed in the temple.
6. '...........That he (Gadādhar) should choose a low-caste woman as his god-mother, not to speak of taking *cooked food* from her hands' (p. 116).	How could the reviewer doubt that Gadādhar ate cooked food from the hands of his god-mother? Vide *Sri Sri Ramakrishna Līlāprasanga* (later mentioned as *Līlāprasanga)*, Vol. I, 1362 B.S., Sādhakbhāva, p. 62; *Kathāmrita,* IV, xvii, 2; V, 1358 B.S., pp. 13, 15, 132. Also Gurudas Burman: *Sri Ramakrishna Charit,* first edition, pp. 17, 21. Sri Ramakrishna only did not or could not accept anything, particularly food and drink, from impure persons. It is preposterous to think that after having gone through the whole gamut of spiritual experience, including *nirvikalpa samādhi,* he observed caste.
6. 'She (Rashmani) sat down in the temple *to say her prayers and to meditate.* After a while Gadādhar *rushed* agitatedly towards her.........and slapped her	See *Līlāprasanga*, Vol. I, 1362 B.S., Gurubhāva, Part I, pp. 169-170. Mark the narration of the incident therein. The word "rushed", as used in the statement in question, seems to have caused the reviewer some trouble. The verb "to rush", as we know, means amongst other things "to

mildly.........She appreciated his act and *spoke out* to all' (p. 125).	move violently". So "to rush" does not necessarily mean "to run". Gadādhar could not possibly slap Rani Rashmani, as he did in anger, without moving his body rather violently towards her. The word "rushed", as I have used it in the text, therefore fits in with the Bengali version of the great event.
7. "Totā gave Gadādhar *a new name*, Ramakrishna" (p. 140).	See *Līlāprasanga*, Vol. I, 1362 B.S., Sādhakbhāva, Footnote on p. 317. According to some, Ramakrishna was Gadādhar's original name. *Vide* Gurudas Burman: *Sri Ramakrishna Charit*, p. 10.
8. Ramakrishna......*shy* of meeting a Christian (Michael Madhusudan)' (p. 153).	My statement in the text stands as: "Ramakrishna was informed, but was mysteriously shy of meeting a Christian". Here the reviewer has left out the word "mysteriously" which obviously makes much difference between the two quotations. Sri Ramakrishna could not possibly hate a Christian inasmuch as he had once practised Christianity himself. Still, he was rather reluctant to meet Michael. This, however, was not understandable.
9. 'Ramakrishna told Mathur Babu that his many devotees were to come............When they did not turn up, Mathur became rather *sceptical*' (p. 167).	Here the word "sceptical" does not mean that Mathur Babu became an unbeliever. The phrase used is "rather sceptical", and it implies that he just doubted whether Sri Ramakrishna's "many disciples", as stated, would come. Vide *Līlāprasanga*, Vol. I, 1362 B.S., Gurubhāva, Part I, pp. 240-241. Mark the question Mathur asks, and also the answer Sri Ramakrishna gives.
10. 'Ram's orthodox relatives objected to Moslems eating at the same *table*' (p. 171).	Why object to the word "table"? Here "eating at the same table" means eating together. The word is used only to express this fact in terms of English habits.
11. 'One group under Narendra...........argued	Vide *Līlāprasanga* Vol. II, 1363 B.S., Divyabhāva, pp. 316-317.

that there was *nothing to worry* about (the illness of the Master) as birth, growth, disease, and death were natural ....Girish and others took a deeper view' (p. 175).	Here the words in the brackets, which the reviewer adds, show that he misunderstands and misconstrues the sentence. In it "nothing" is the object of "to worry about", and the ellipsis after "about" is "regarding the illness of the Master", not "the illness of the Master". The sentence, in short, means there is no need for speculating on the illness.
12. '(When at Cossipore) Narendra was *a Vedāntist and so did not believe in* Incarnation' (p. 182).	Cf. *The Works of Swami Vivekananda*, Vol. VII, 3rd edition, Advaita Ashrama, 1947, p. 399; also *Kathāmrita*, V, 1358 B.S., p. 236.
13. 'One day Ramakrishna went into samādhi and *on awaking* from the state touched Narendra and said, "To-day, I have given you all".........' (p. 182).	See *Life of Sri Ramakrishna*, Advaita Ashrama, 1929, pp. 668-669; Romain Rolland: *Life of Ramakrishna*, p. 312. Here the word "awaking" is used in a figurative sense.
14. 'Ramakrishna died on *August 15*, 1886' (p. 182).	In Romain Rolland's *Life of Ramakrishna*, Advaita Ashrama, the date of Sri Ramakrishna's death is the 15th of August, 1886, while in *Life of Sri Ramakrishna*, Advaita Ashrama, the date is put as the 16th of August, 1886. Which date is correct I wonder.
15. "On p. 173, a list of the *sannyasin* disciples is given, which omits Swami Trigunatita, but strangely enough includes Swami Nirmalananda".	I regret that the name of Swami Trigunatita was not included in the list through inadvertence. It might be a typographical mistake which remained undetected. But I am at a loss to understand why one should object to the name of Swami Nirmalananda being included therein. In the *Līlāprasanga*, Vol. II, 1363 B.S. Divyabhāva, in the footnote on page 386, Swami Saradananda, in reference to the disciples who served the Master during his illness at Cossipore, writes:

"Hari, Tulasi, and Gangadhar practised meditation at home and only occasionally they came to Cossipore".

Who can, then, doubt that Tulasi, later known as Swami Nirmalananda, like Hari and Gangadhar, was a disciple of Sri Ramakrishna? Oddly enough, the reviewer becomes so emphatic in his doubt here that he employs the phrase "strangely enough".

16. "He rejects Saṅkara's ideas and finds a synthesis of the personal and impersonal aspects of God in the conception of Purusottama, with which Sri Aurobindo has familiarized the public in recent years, though our author does not accept his philosophy *in toto*".

Here I should begin by saying that Sri Aurobindo never aspired to familiarize "the public" with the conception of Purusottama. Neither is this conception his own. One whole chapter in the *Bhagavadgītā* is devoted to this topic. Nor do I ever seek a synthesis of "the personal and impersonal aspects of God" in the conception of Purusottama. To quote from my book:

"As Ramakrishna said, God reveals Himself with form and without form as well and as such is the supreme Person (p. 292).

"Indeed in the *Bhagavadgītā* an attempt is made to reconcile the personal and the impersonal by the conception of the supreme Person—Purusottama, but it is not complete. Ramakrishna further clarified the idea of the divine person by effecting a synthesis of the personal and the impersonal. As he showed, God revealing Himself in the twofold way mentioned above transcends the determinate and the indeterminate, the personal and the impersonal, and what God in Himself is as apart from these two kinds of revelation nobody can tell. That is the ultimate mystery which no mystic can penetrate" (p. 293).

Strange to say, the reviewer does not take care to grasp the central theme of the book.

17. 'The undifferentiated and the unconditioned is the end of the Advaita method of realization, which has *nothing* to do with God

Vide *Brihadāraṇyakopaniṣad*, IV, v, 6; Also *The Complete Works of Swami Vivekananda*, Vol. VII, Advaita Ashrama, 1947, p. 50.

the Personal *either as an end or as a means'* (p. 188).	
18. 'The knowledge which the *illusionist* calls the peak of mystical experience is only another name for ignorance' (p. 189).	If the Advaitist is not an illusionist, what else he is the reviewer ought to have told the reader.
19. 'The state in which the devotee appreciates that he has realized the Absolute is evidently a higher one than that in which he is completely merged in the Absolute' (p. 204).	This is the crucial point. I have discussed it in detail in the book. *Vide* pp. 201-204. If one cannot agree to this view, one should controvert it, mere doubting means nothing.
20. 'Ramakrishna...... never said that the undifferentiated is the sole *reality* and that all else is *illusory*' (p. 204).	It is not quite clear what the reviewer means by the italics. He at any rate does not doubt "never said..............."
21. 'But we cannot go on multiplying such passages'.	As the reviewer does not agree with my views, he may or might call in question not only some selected passages, but every word or phrase I have written in the book.

The reviewer ends up by saying, "Sri Ramakrishna who declared all religions to be true can certainly be approached from diverse points of view".

Here "diverse points of view" means, if anything, the standpoints of empirical life, including married life, sannyasa in relation to duties to parents, religion, metaphysics, etc. So far so good. But trouble begins if it is meant that the teaching of Sri Ramakrishna is susceptible of more than one interpretation.

It is now a commonplace of history that Sri Ramakrishna demonstrated by his life and spiritual experiences that the religions, sincerely practised, would lead to the same goal, *i.e.* God. But Sri Ramakrishna did not teach that Truth is relative to individual points of view. He undoubtedly taught that Truth is one and eternal. Now we have only to grasp what exactly he did teach about Truth.

A PEEP INTO THE VEDIC STUDIES*

Dvijendra Nath Guha Chaudhuri

We give below a specimen of the mode of Vedic interpretation by the European scholars. In the explanation of a verse in the Ṛig Veda (III, 59, 8), the phrase **पञ्चजनाः** is variously explained. The following are the elucidations of the Western scholars: **पञ्चजनाः**—Max Müller speaks of the Āryas as the people of the five nations. (Vide, *India: What can it teach us?* p. 95, and the note thereon). Roth is of opinion that they are the Aryans as the middle point and the people of the North, the East, the West and the South by whom they are surrounded (not in S. L.). Accepting this view, Geldner adds that all mortal beings are signified by the word **पञ्चजनाः** । The other nations dwell in all sides, centering on the Aryans. Elsewhere, he says that by the term **पञ्चजनाः** is signified either the five nations or all mankind of the world (Geldner, *Der Ṛig Veda in Auswahl.* I. Glossar. Stuttgart, 1907-1909). Muir says that by the phrase **पञ्चजनाः** not only the Aryans is meant, but also it speaks of all nations of the world—he merely echoes the sense of Roth by referring the passage—"**इमाः याः पञ्च प्रदिशो मानवीः पञ्चकृष्टयः**" (Av. III, 24, 2). Here, he takes it as the dwelling-places of other nations in all sides and by the word "**ध्रुवादिक्**" (Av. IV, 14, 8; XVIII, 3, 34), he refers to the land of the Aryans (Muir's *Sanskrit Text*, Vol. I, p. 176, fg.). Muir renders Roth's article in the St. Petersburg Dictionary, thus "*the phrase, five races*, is a designation of all nation, not merely of the Aryan tribes. It is an ancient enumeration of the origin of which we find no express explanation in the Vedic texts. We may compare the fact that the cosmical spaces or points of the compass are frequently enumerated as *five*, especially in the following text of the Av. III, 24, 2. These five regions, the five tribes sprung from Manu, among which (regions) we should have here to reckon, as the fifth, the one lying in the middle (Dhruvādik, Av. IV, 14, 8 ; XVIII, 3, 34), that is, to regard the Āryas as the central point, and round about them the nations of the four regions of the world. According to the Vedic usage, five cannot be considered as designating an indefinite number." Heinrich Zimmer, a great Indologist and Professor of Sanskrit in the University of Heidelberg, does not approve the opinions of Roth and Geldner. He says that in the Vedas the distinction between Ārya and Dāsa are clearly shown in numerous passages, and the word **पञ्चजनाः** does not convey the idea of expressing all mankind in general. He, also, adds that in the Ṛig Veda **जनाः** or **जनासः** are in all places meant the Āryas. We may refer the following text where **जनासः** (in the refrain **स ज॑नास॒ इन्द्रः॑**, Rv. II, 12) prominently occurs. Of course, Zimmer holds that, after the compilation of the Ṛig Veda, the meaning of the word **पञ्चजनाः** is used in a wider sense. The Ṛig Veda furnishes the following places where the phrase **पञ्चजनाः** is used in the sense of "**पञ्चजाताः**" (IX, 65, 23 ; VI, 61, 11). In the passage (V, 32, 11), Indra is spoken of as the deity of the "**पञ्चजाताः**". Mention is also made of **अग्नि** as "**पाञ्चजन्य**" in the text of the Ṛig Veda (IX, 66, 20). Summing up the above arguments, Zimmer concludes that in the term **पञ्चजनाः** only the Āryas are meant, especially it genealogizes **अनु, द्रुह्युः, यदु, तुर्वश** and **पुरु** (I, 108, 8). Macdonell accepts the view of Zimmer. E. Washburn Hopkins (JAOS, Vol. XV, p. 260) tries to refute Zimmer by saying that there was no **तुर्वश** dynasty, only there was a king by the name of **तुर्वश** in the genealogy of **यदु**, but his argument seems to be a feeble one. Albrecht Weber supposes that the **पञ्चजाताः** in the age of the Brāhmaṇas became "**पञ्चाल**s", and in the Satapatha Brāhmaṇa (XIII, 5, 4, 23), they were famed as "**सप्तजाताः**". This seems to be an incorrect one, because in the Ṛig Veda **पञ्चाल**s are not **पञ्चजनाः** but they are "**क्रिवि**s". Thus, we see that the interpretation of **पञ्चजनाः** is not at all intelligible to the Western scholars. However, the following elucidations of the Eastern Vaidikas are worth mentioning:—**पञ्चजना** is a very important term, because in many places its references are found as **पञ्चजनाः, पञ्चमानुषाः, पञ्चमानवाः, पञ्चचर्षणाः** and **पञ्चकृष्टयः** in the sense of **पञ्चजाताः**. They occur 22 times in the Ṛig Veda, in Av. too, more than five numerals. The word, also, occurs in the texts of Aitareya Brāhmaṇa of the Ṛig Veda and Taittirīya Saṃhitā respectively. The phrase **पञ्चजनाः**

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* The writer wrote series of articles on *Vedische Studien*, when he was very deeply studying the ancient sacred lore of the Aryans under the venerable feet of his father Late Avināśa Chandra Guha who was a man of precocious genius, a man of enormous reading and unlimited intellectual propensities, a man of versatile scholar of Sanskrit, Sanskritic languages, and a polyglot of outstanding merits. Many of them such as, "Introduction", "Mīmāṃsā rules of Interpretation of the Vedas", "The Vedāṅgas—the subsidiary branches of Vedic exegesis", "Comparison between the Vedic Sanskrit and the Classical Sanskrit", etc., etc., were appeared in "Kāśīpur Nivāsī", Bariśāl, Bengal, Vol. LXXI, Nos. 34-37, 45-48, 1353 B.S.; Do., Do., Do., Vol. LXXII, Nos. 1-4, 1354 B.S., under the caption "The exegesis of the Veda: Ancient and Modern." Under the same topic "The exegetical expositions of the Veda—anterior and posterior—their sequilae" saw the light in "The Calcutta Review", October, 19 8, pp. 25-48. The present memoir are the continuation and the completion of the subject under review. Ed.

remains compounded in form (समास) in the Bṛihadāraṇyaka Upanishad of the Vājasaneyi Saṃhitā. The divergences of opinion happen regarding the exact significance of the said term among the Eastern Vaidikas also. Aitareya Brāhmaṇa explains पञ्चजनाः thus—(i) देव, (ii) नर, (iii) गन्धर्व्व, (iv) अप्सरस्, (v) नाग & पितृ (combined). Yāska in his Nirukta (III, 2, 2) quotes the view of औपमन्यव, thus—"चत्वारो वर्णा निषादः पञ्चम". His own view differs from it—"गन्धर्व्वाः पितरो देवा असुरा रक्षांसीत्येके" (*Ibid.*). Sāyaṇa accepts the view of औपमन्यव everywhere in his commentary. Devarāja Yajwa (a scholiast of Nighaṇṭu of Yāska's Nirukta, prior to Sāyaṇa) comments in his "Nirvachana"—

पञ्चजनाः। अत्र भाष्यम्—तत्र पञ्चजना इत्येतस्य निगमा भवन्ति। "त॒दद्य वा॒चः प्र॑थ॒मं मं॑सी॒य ०—० जु॑षध्वम्" (ऋग्वेद १०।५३।४)। तदद्यवाचः परमं मंसीय 'येनासुराणभिभवेम देवाः।' असुरा असुरता स्थानेष्वस्तास्थानेभ्य इति वापि वासुरिति प्राणनामास्तः शरीरे भवति तेन तद्वन्तः। सोऽदेवानसृजत तत्सुराणां सुरत्वमसोरसुरानसृजत तदसुराणामसुरत्वमिति विज्ञायते। 'ऊर्जाद उत यज्ञियासः।' अन्नादाश्च यज्ञियाश्चोर्गित्यन्ननामोर्जयतीति सतः पक्वं सुप्रवृक्णमिति वा। 'पञ्चजना मम होत्रं जुषध्वम्।' गन्धर्व्वाः पितरो देवा असुरा रक्षांसीत्येके, चत्वारो वर्णाः निषादः पञ्चमः इत्यौपमन्यवः। निषादः कस्मात्? निषदनो भवति निषण्णमस्मिन् पापकमिति नैरुक्ताः। "यत् पा॑ञ्चजन्यया वि॒श्वेंद्रे"—(ऋग्वेद ८।६३।७)। पञ्चजनीनया विशा, पञ्च पृक्ता संख्यालिङ्गत्वयोगेष्वविशिष्टा (निरु ०३।७।८)। इति।

Skanda Swāmin interprets, thus—

'पञ्चजना इत्येतस्य सन्धिग्धस्य विवेकार्थं निगमा भवन्ति सन्देहश्च मनुष्यनामसु पाठात् पञ्चशब्देन समानाधिकरणः। तत्र यदि देवदत्तादिपञ्चकविषयः स्यात्, गन्धर्व्वादिपञ्चकविषयो वा, न मनुष्यमात्रनामविषयतात्र स्यात्, मनुष्यमात्रनामैतदित्याचार्यमतान्तरप्रदर्शनाय पदद्वयमिदम्मनुष्यपदार्थे वर्त्तते इति वैचित्र्यप्रदर्शनार्थं उपन्यासः। न मनुष्यनामत्वेन च द्रष्टव्यः। एकीयमतेन चाष्टौ देवताया उच्यन्ते। तत्र पक्षे नागानां गन्धर्व्वेषु, यक्षाणामसुरेषु, पिशाचानां रक्षस्वन्तर्भावदृष्टत्वाविरोधात्। तदद्य वाचः। सौचीकस्याग्ने विश्वेषां देवानां संवादो होत्रजपश्चायम्। तत् अद्य अस्मिन् कर्मणि वाचो माध्यमिकायाः प्रथममुत्कृष्टं स्वरसौष्ठवार्थसदनत्वदेवताविशिष्टं मंसीय जानीय। येन अज्ञानेन

असुरा यज्ञविघ्नं कुर्वन्तः, हे देवाः ! अद्य तानभिभवेम । हे ऊर्जादः ! उत अपि यज्ञियासः यज्ञस्य सम्पादयितारः पञ्चजनाः आचार्य्यमतेन ऋत्विङ्मनुषाः । यमव्यवस्थपतीष्टौ निषादानां यज्ञसम्पादित्वमस्ति, शूद्रस्याप्योदनसवे, 'आयुरसीति शूद्राय प्रयच्छति, तत्ते प्रयच्छामीति शूद्रः प्रति गृह्णाति'—इत्येवमादिना । तथा 'दासी पिनष्टि पत्नीवेत्यत्र दास्यादेर्व्यापारादप्येवं यज्ञसम्पादित्वमैकीयमतेन । पञ्चयज्ञाङ्गभूता देवगन्धर्व्वादयः साधनभावेन यज्ञसम्पादिनः । अत उच्यते—'मम होत्रं जुषध्वम् ।' होतृकर्मजुषध्वम् सम्पादयतेत्यर्थः । अन्ये मन्यन्ते—यदैकीयमतं यच्चौपमन्यवस्यतदुभयमप्याचार्य्यस्येति । तथा च मन्त्रव्याख्यानम्—पञ्चजातयो ब्राह्मणादयो यज्ञियाः गन्धर्व्वादयः सर्व्वेऽपि होतुः सख्येन व्यापारेण सेव्यध्वमिति सम्प्रत्ययासाधारणं मनुष्यमात्रनामत्वेनैव निगमं दर्शयति 'यत् पाञ्चजन्यया विशा ।' प्रगाथस्यार्षम् । यत् यदा पाञ्चजन्यया पञ्चजनेषु मनुष्येषु भवया विशेषति पञ्चभिरपि मनुष्यजातैरित्यर्थः'—इत्यादि । पञ्चेति निर्वाच्यम् पृक्तेति निर्वचनम् । संख्येति विषयकथनं सम्बन्धवत् सर्व्वलिङ्गैरित्याह—'लिङ्गत्रययोगेऽप्यवशिष्टा'—इति । ननु षड़ादीन्यप्यवशिष्टानि ? उच्यते—प्रत्ययोपात्तरूपसम्बन्धस्यार्थाभिधानात् अदोष इत्युक्तम् । अपि च या पृक्ता सा पञ्चेति किन्तु या पञ्च सा पृक्तेति तदन्यच्च एकपदनिरुक्तव्याख्यानम्, यत् पञ्चजन्ययेत्यस्य द्वितीयपादादिव्याख्यानम् चास्माकमत्रानुपयुक्तत्वान्न लिखितम् । 'पृची सम्पर्के' (रु॰ प॰) । 'कनिन्युवृषित' &c., (उ॰ १।१५६)—इत्यत्र प्राक्प्रत्ययनिर्द्देशस्याधिकविध्यर्थत्वात् कनिनि बहुलकात् ऋकारस्याकारो नकार उपजनश्च । भोजराजस्तु—'वृषितक्षिराजिघसिदाचिप्रतिहिविभ्यः कन्'—इत्याह, तदा 'पचि विस्तारे' (चु॰ प॰) । इति धातुः । एकादिभ्यो विस्तीर्णा पञ्चसंख्या । जायन्ते जनाः । 'पचाद्यच (३।१।१३४) ।' 'पञ्चभिर्भूतैर्जाताः पञ्चजनाः'—इति चीरस्वामी ।*

Thus, we see that, inspite of the differences of opinion regarding the interpretations of the Eastern Vaidikas on the basis of philological as well as explanatory ways, they are far better and reasonable than the Vedic Scholars of the West.

It is necessary to say a few words of the myths and religious beliefs of ancient India in the light of interpretation of the Vedic texts. The important question rather lies in the fact whether the hymns of the Vedas arose independently in the matter of all sacrificial rites. The seer had caught a glimpse of the hymns for the performance of certain sacrifices and ceremonies, thus needed through their austere meditation, through which they translated their actions into invocations of the deities invoked at the time. The orthodox view was thus ensconced. It is *ensemble* of the Vedic religion. Truly said Adolf Kaegi in his beautiful book, "*Der Ṛgveda, die älteste Litteratur der Inder*".[1] (The Ṛig Veda, the oldest Literature of the Indians)—"The great majority of the songs are invocations and glorifications of the deities addressed at the time; their keynote is throughout a simple out-pouring of the heart, a prayer to the Eternal Ones, and invitation to accept favourably the piously dedicated gift . . . . To that which a god placed in his soul and caused him to feel: to the impulse of his heart the singer wishes to give eloquent expression." Hermann Oldenberg, the ingenious and judicious interpreter of the Ṛig Veda as well as of the myths and religious beliefs on Indian literature, thinks in his "*Religion des Veda*" [2] ". . . could have arisen only in the exclusive circles of the priestly sacrificial experts." Dr. Winternitz adds, "There is no doubt that a great number of these hymns arose independently of all sacrificial rituals, and that in them the breath of genuine primeval religious poetry is felt.".[3]

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* Quoted in Devarāja Yajwa's, "*Nirvachana*". Reference—Yāska's, *Nirukta*, III, 2, 2 and the commentary of Durgāchārya ("*Ṛijwartha*") thereon; Macdonell and Keith's *Vedic Index, sub voce*, Vol I, p. 466; "Pravāsī", Māgh, 1327 B. S., pp. 349-351, Tatacharya (D. T.)—Methods of Vedic interpretation. J. Venk. O. I., XIV (2), 172-186.

Great services have been caused to the investigation of the religion of the Veda and, above all, the true explanation of the texts of the holy scriptures by the distinguished French scholar Abel Bergaigne who, in his worthy book, "*La religion védique d' après les hymnes du Ṛg Veda*", [4] left no stone unturned to clarify the explanation and the myths as well of the hymns of Ṛig Veda. Whoever wishes to gather information regarding the interpretation as well as the myths and religious beliefs of the ancient Indians in the Vedic age, should in all events and in all circumstances pay particular attention to Alfred Hillebrandt's, "*Vedische Mythologie,*"[5] A. A. Macdonell's, "*Vedic Mythology*'',[6] for the best reproduction of the facts of the Vedas; for the myths and the ancient Indian's religious beliefs both H. Oldenberg's, "*Religion des Veda*", & Bergaignes' "*La religion védique d'aprés les hymnes du Ṛg Veda*" should be consulted. The cosmogony and all the philosophical hymns of the

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[1] Second ed., Leipzig, 1881. Ṛig Veda, comprehensive and condensed mannual of Vedic research, authorised translations with additions to the Notes—by R. Arrowsmith.

[2] Berlin, 1894, p. 3.

[3] History of Indian Literature, Vol. 1, Cal., 1927, p. 74.

[4] Paris, 3 Vols., 1878-1883.

[5] 3 Vols. Breslau, 1891-1902.

[6] Bühler's *Grundriss der indo-arischen Philologie und Altertumskunde*, III, I, A, Strassburg, 1897.

Ṛig Veda are clearly and vividly discussed in H. W. Wallis's, "*Cosmology of the Ṛig Veda*",[1] W. D. Whitney's, "*Contribution to the journal of the American Oriental Society*",[2] P. Deussen's, "*Allgemeine Geschichte der Philosophie*", *I*, L. Scherman's, "*Philosophische Hymnen aus der Ṛg. und Atharva veda Saṃhitā*,"[3] J. Muir's, "*Original Sanskrit Texts*,"[4] etc., etc. A few references to death and life after death are to be traced out in some of the hymns of the Ṛig Veda. The soul is spoken of as forsaking the body not only after death but also in semiconsciousness or in a state of *trans* (RV. X, 58). There is, however, no indication even in the latter interpolation of the Ṛig Veda (Maṇḍala, X) as to the transmigration of the soul and eternal rebirth, a philosophical thought which the Indians strongly holds in later centuries. But one passage of the Ṛig Veda (X. 16, 1-6) indicating the soul as going to the waters or the plants may sum up the theory of the transmigration of the souls. This is addressed to Agni when a dead body is laid on the funeral pile and the fire is lighted—

> "The Sun receive thine eye, the wind thy spirit,
> Go as thy merit is, to earth or heaven.
> Go, if it be thy lot, unto the waters, so make
> Thine home in plants with all thy members."

Yāska, the great etymologist and the first commentator of the Veda, has mentioned only three Vedic deities which are as follows:—

"तिस्र एव देवता" इति नैरुक्ते उत्तरषट्के दैवतं काण्डम् (७।२।१)

"अग्निः पृथिवीस्थानो वायुर्वेन्द्रो वान्तरिक्षस्थानः सूर्यो द्युस्थानः" (७।२।१)

i. e., (a) **अग्नि** is the god of terrestrial region (**पृथिवीस्थान**), i. e., (b) **इन्द्र** or **वायु** is of aerial region (**अन्तरिक्षस्थान**), i.e., (c) **सूर्य** is of celestial region (**द्युस्थान**). They adopted different names in different spheres of their activities. Yāska, again, said that all the Vedic deities are nothing but the manifestations of one and the same soul—"**एकस्यात्मनोऽन्ये देवाः प्रत्यङ्गानि भवन्ति**". This gives to the tendency to monotheism of the religion of the Veda The seers guessed that several natural phenomena had somewhat divine forces in them which were, again, personified as manifold deities: in the likewise manner they went one step further and came to the conclusion that all the deities were the aspects of one and the same, all sprung up from the pervading Divine Being. Mention is made in this connection of a transition from many gods to one god in the Ṛig Veda (I, 164, 46). In the foregoing verses of the Ṛig Veda are mentioned several Vedic deities who are but different forms of Single Divine Being. The Vedic seers divided the whole universe into three domains: (i) earth (**भूः**), (ii) air (**भुवः, अन्तरिक्ष, वायुर्लोक**), and (iii) heaven (**स्वः, स्वर्लोक द्युलोकः वा**). These three triads are the favourite dwelling-places of the deities. **द्यौ, वरुण, मित्र, आदित्य, सूर्य, सविता, पूषा, विष्णु, विवस्वान्, अश्विद्वय, उषा** and **रात्रि**—are the gods of heaven (**द्युलोक**) ; **इन्द्र, रुद्र, मरुत्, वायु, वात, पर्जन्य, मातरिश्वा, आप, अपांनपात्, अज-एकपाद, अहिर्बुध्न्य, त्रित-आप्त्य**—are the gods of mid-air (**अन्तरिक्ष**) ; **पृथिवी, मही, नदी, अग्नि, सोम, बृहस्पति,**—are the gods of earth (**भूलोक**). Hence, according to the etymologists (**निरुक्तकार**s), the number of Vedic deities is only three. Some are of opinion that there are thirty-three gods. The Ṛig Veda holds the same view, thus—(III, 9, 9):

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[1] London, 1887, pp. 89 ff.
[2] XI, p. cix.
[3] Strassburg, 1887, pp. 1 ff.
[4] Vol. V, p. 356.

"त्रीणि शता त्री सहस्राण्यग्निं त्रिंशच्च देवा नव चासपर्यन्"

(Also, VIII, 30, 2 ; I, 34, 11 ; VIII, 28, 1; VIII, 35, 3; VIII, 39, 9 ; VIII, 57, 2 ; IX, 92, 4). Atharva Veda, too, approves the same—**"यस्य त्रयस्त्रिंशद्देवा निधिं रक्षन्ति सर्वदा"**. The modern commentator of the Ṛig Veda, Swāmi Dayānanda Sarasvatī, explains the thirty-three deities in his **ऋग्वेदादिभाष्यभूमिका** in the following manner :—

त्रयस्त्रिंशद्देवदेवाः सन्ति । अष्टौ वसवः । एकादश रुद्राः । द्वादशादित्याः । इन्द्रः प्रजापतिश्चेति । तत्र वसवः—अग्निः, पृथिवी, वायुः, अन्तरिक्षं, आदित्यः, द्यौः, चन्द्रमाः नक्षत्राणि च । एकादश रुद्राः । तत्र—प्राणः, अपानः, व्यानः, समानः, उदानः, नागः, कूर्मः, कृकलः, देवदत्तः, धनञ्जयश्च इमे दश प्राणा एकादशं आत्मा सर्वे मिलित्वैकादश रुद्राः भवन्ति । चैत्राद्या फाल्गुनान्ता द्वादशमासा आदित्या विज्ञेयाः । यद्वा, विष्णु (१।१५।१२१-१२२) कूर्मपुराणे १।४१।२-३) उक्तौ—

"तत्र विष्णुश्च शक्रश्च जज्ञाते पुनरेव हि ।
अर्यमा चैव धाता च त्वष्टा पूषा तथैव च ॥
विवस्वान् सविताचैव मित्रो वरुण एव च ।
अंशुर्भगश्चादितिजा आदित्या द्वादश स्मृताः ॥"

इन्द्रः परमैश्वर्य योगाद् स्तनयित्नुरशनिर्विद्युदिति । प्रजापतिर्यज्ञः पशव इति । प्रजायाः पालनहेतुत्वात् पशुनां यज्ञस्य च प्रजापतिरिति गौणिकी संज्ञा कृतास्ति । एते सर्व्वे मिलित्वा त्रयस्त्रिंशत् देवा भवन्ति ।

Mention is also made about the thirty-three deities in the Rāmāyaṇa and the Mahābhārata, thus—"तत् शृण्वन्तु त्रयस्त्रिंशद् देवाः सेन्द्रपुरोगमाः" —Rāmāyaṇa, Ayod. XI, 13. "एते देवाः त्रयस्त्रिंशत् सर्वभूतगणेश्वराः"—Mahābhārata, Anuśā., 150, 24. The different names of thirty-three deities are found in Taittirīya Saṃhitā, Śatapatha Brāhmaṇa and Aitareya Brāhmaṇa. In the opinion of Sāyaṇa, the number of deities is thirty-three. Thus, the deities have been divided into three classes according to the regions or worlds they duly occupied.

MINOR DEITIES OF THE VEDIC PANTHEON

The Vedic seers are all but the gods shining (the term देव being derived from दिव् to shine—द्योतमाना). This attribute of देवत्व is impersonated in heaven, in earth, in sun-god, in the starry sky of night, in the glowing dawn, etc. The Vedic gods are the emblem of powers of nature, and they are glorified, worshipped, and invoked. The Greek mythology, too, is based on nature herself. The hymns of the Ṛig Veda are all but praises and prayers addressed to deities who are nothing but the symbol of powers of nature. As contrasted with complete personification of the Greek mythology, many gods of the Vedas or scarcely more than half are an active force of nature. In short, the striking feature of the Vedic religion is its practical and utilitarian nature. The gradual transformation of the natural phenomena into mythological aspects, such as into gods and goddesses, is instilled in the Ṛig Veda. Among such other mythological figures, whose original nature is partly vanished or forgotten in the hymns and who are, no doubt, honoured more as powerful, lofty beings, performers of all sorts of miraculous works, are *Indra, Varuṇa, Mitra, Aditi, Viṣṇu, Pūṣan, the two Aśvins, Soma, Rudra* and *Parjanya*. Originally they were identified with natural phenomena and natural beings. The epithets, as applied respectively, to their names, became gods' names, and thus new gods were formed. Savitār, "the inspirer", "the life-giver", and Vivaśvat, "the shining", were at first epithets, then became the names of the sun, and finally they were sun-gods by the side of Sūrya. Viṣṇu, Mitra, Pūṣaṇ appear in the Ṛig Veda as sun-gods. Nowhere in the whole of Ṛig Veda, Viṣṇu's predominance is referred to. In latter times, in the Purāṇic age, Viṣṇu's three strides were considered as Vāmana incarnation in which he was said to have covered the three worlds with his three steps, and He saved, too, all beings from destruction by His boar incarnation at the time of deluge.[1]

Mitra is identical with Mithra of the Zend Avesta.[2] He is an ancient Aryan Sun-god and scarcely invoked singly except only in one hymn of the Ṛig Veda (III, 59). He is especially associated with Varuṇa. The etymology of the word **"मित्र"** is as follows :—

मित्रः। प्रमीतात्मरणात् त्रायते। 'सुपि स्थः' (पाः ३।२ ४)—इत्यत्र सुपीति योगविभागात् प्रमीतशब्दस्य मिद्भावः। यद्वा, 'डुमिञ् प्रक्षेपणे' (स्वा० उ०)। यद्वा, 'पिविमिविणिविसेवने' (भ्वा० प०)। सम्मिन्वानः सम्यक् वृष्टिं प्रक्षिपन् सम्यक् सिञ्चन् वा द्रवत्यन्तरिक्षे। मिन्वानशब्दस्य मिद्भावः, द्रवतेः डुप्रत्ययान्तस्य त्रभावः। 'ञिमिदा स्नेहने' (दि० प०) अन्तर्णीतण्यर्थः 'अमिचिमिदिशसिभ्यः क्त्र' (उ० ४।१६३)—इति क्त्रप्रत्ययः। णिजन्ताद्वा बाहुलकाद्रूपसिद्धिः। सर्वंशस्यान्युदकेन स्नेहयति। "मित्रो जनान्यातयति ब्रुवाणः" (ऋग्वेद० ३।५९।१)। 'ञिमिदा स्नेहने' (दि० प०) अन्तर्णीतण्यर्थः।[3]

Sāyaṇa comments on the word, thus—**"मित्रः प्रमीतेस्त्रायको हरभिमानी देवः"**—(Rv. I, 115, 6). It is quite uncertain as to their identity regarding the natural phenomenon to which they owe their origin. Though the investigators spared no pains in finding out the explanation of gods like *Indra*, *Varuna*, *Rudra*, *Adili*, and the Aświns, (to mention the most important ones out of manifold deities) still they could not come to the same conclusion, but differed widely. Mention is made of *Indra* who is "the god of the storm", to others "an old sun-god." He is represented in several hymns of the Ṛg. Veda as having settled the quaking mountains (Ṛg. Veda, II, 12, 2).

The epithet **अच्युताच्युत** (the mover of the immovable or the like) is often applied to him with reference to his action. The epithets,

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[1] For characteristics and functions of Viṣṇu, Vide—A. A. Macdonell's, *Vedic mythology*, pp. 37-42, 17; Hopkin's, *The Religions of India*. pp. 56-57; for a curious derivation of the word Viṣṇu, see Bloomfield's, *Religion of the Veda*, p. 168. Vi-through, snu (or sānu)--back. Hence, Viṣṇu originally meant—"through the back". This explains his taking three strides. For the position of Viṣṇu and the significance of his three strides in the Ṛig Veda, vide—Muir's, *Sanskrit texts*, IV, 97-98; *Nirukta*, XII, 2 in which are cited the views of the ancient mythologians—Aurṇavābha and Śākapūṇi. Also, Durgāchārya's "*Rijwartha*" (Commentary on Nirukta) thereon.

[2] Mitra. Sanskrit Mitra—Mi-it-ra of the Boghaz-köi inscription (vide—A. A. Macdonell and A. B. Keith's, *Vedic Index*, Vol. I, preface, p. viii)—Avesta *M*ithra—Mihir of later Persian. For the characteristics and functions of this god, vide—A. A. Macdonell's, *Vedic mythology*, Mitra; John Muir's, *Sanskrit Texts*, Vol. V, sec. V; Hopkin's, *The Religions of India*, pp. 67, 69; Moulton's, *Early Zoroastrianism*, pp. 62-67.

[3] Yāska's, Nirukta with the commentary of Devarāja Yajwa's, "Nirvachana" of Nighaṇṭu—ed. by Jībānanda Vidyāsāgara. Vol. I, Cal., 1891, Ch. V, IV, p. 389.

पक्षच्छिद्, गोत्रभिद्, etc., are applied to Indra, because he with his adamant cut off the wings of most of the mountains (except **मैनाक** who escaped by hiding himself in the ocean. Cf. Rāmāyaṇa, Sundara Kāṇḍa, Ch. I, ślokas 115-117). The epithet **वृत्र** is also applied to Indra in the Vedas (the term derived from the root **वृ**—to cover or to obstruct). He is said to be the remover of drought. In the Purānic age, this is developed into the myth of the terrible fight between Indra, the lord of the gods, and **वृत्र**, the demon. Indra's distinctive Vedic epithet, *Vṛitrahan*, is found in the Avesta as *Verethraghna* (i. e., a symbol of the god of victory).[1] He occupies an eminent place in the Ṛig Vedic pantheon. The 250 hymns (i. e., more than one-fourth of the Ṛig Veda) are devoted to his praise.[2] The etymology of **इन्द्र**, as given by Devarāja Yajwa, pp. 387-388, thus—

इराशब्द उपपदे दृणातेर्दधातेर्दारयतेर्वा 'ऋज्रेन्द्राग्रवज्रविप्र' etc. (उ० २।२८)—इति रक्प्रत्ययान्तो निपात्यते। निपातनाद्रूपसिद्धिर्ज्ञेया। इरा अन्नमनेन सम्बन्धाद्वा तद्धेतुभूतकं बलं लक्ष्यते। तेन बललक्षितलक्षणया तदाधारभूतो मेघः। इरां मेघं धारात्मना दृणाति विदारयति। बीजं व्रीह्यादि तथासौ वृष्टिप्रदानेन विदारयति। अङ्कुरोद्भेदेनाभिकाशश्च विदारणम्। इरामन्नं तद्ददाति वा। इरां दधाति धारयति वा। इन्द्रावुपपदे द्रवतेः रमतेर्वा निपातनम्। इन्द्रवे द्रवति गच्छति सोमं पातुमित्यर्थः। इन्द्रौ रमतेऽतिप्रियत्वात् नान्यत्र। इन्धेर्वा निपातनम्। इन्धे दीपयति शरीरमध्यवर्त्तीपञ्चवृत्तिः प्राणो वायुः शरीरभूतादि इध्यते वा प्राणैः। शरीरमध्यवर्त्तीप्राणभावेन क्षेत्रज्ञसंज्ञकः। प्राणैर्योगादिभिर्योगबलेन वा सम्यगाभिमुख्येन दीपयति आत्मोपासकाः। इदमुत्पादी करोति पश्यति वा इन्द्रः। इदं कृत्स्नं जगद् वृष्टिप्रदानद्वारेण करोति लोकपालत्वात्, अस्य सर्वस्य शुभाशुभकर्मणो द्रष्टा वा। इदुपपदे दारयतेर्द्रावयतेर्वा इन्द्रपदम्। इताश्च शत्रूणां दारयिता द्रावयिता वा। यद्वा, इताश्च यज्वनामादरयिता च। सर्वत्र निपातनाद्रूपसिद्धिः। "महान्तमिन्द्र पर्वतं वियद्वः" (ऋग्वेद ५।३२।१)।

Varuṇa, according to some, "a god of the heavens", to others, "a moon-god", while to the third, "the lord of the seas". He is a much more important deity of the sky, being invoked as the greatest of the Vedic gods by the side of Indra. He is a great upholder of physical and moral order as well.[1] The derivation of the word वरुण is thus, (p. 387)—'वृञ् वरणे' (स्वा० उ)। 'कृविदारिभ्य उनन्' (उ० ३।५३)। अन्तरिक्षे उदकमावृणोति। "नो चो नवारं वरुणः कवन्धम्"—(ऋग्वेद ५।८५।३)। Sāyaṇa comments on the word, thus—"वरुणोऽनिष्टानां निवारयिता रात्र्यभिमानी"—(Rv. I, 115, 6).

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[1] Vide—Moulton's, *Early Zoroastrianism*, p. 103, etc

[2] For the characteristics and functions of Indra, vide—Muir's, *Sanskrit Texts*, Sec. vi; Macdonell's, *Vedic mythology*, pp. 54-66; Hopkin's, *The Religions of India*, pp. 91-96; M. Bloomfield's, *Religion of the Veda*, pp. 173-182; In-da-ra of the Boghaz-köi inscription.

Rudra—" a storm-god." According to Oldenberg—"A mountain and forest god", to Hillebrandt—"a god of the horrors of the tropical climate".[2] The etymology runs as follows, (p. 387)—

रुद्रः। रौतेः क्विपि। रुच्छब्दं करोति। 'आतोऽनुपसर्गे कः' (पाः ३।२।३)। यो रुवन् एति, रौतीति वक्तुं शक्यते। रोरूयमाणोऽत्यर्थं शब्दं कुर्वन् मेघोदरस्थो द्रवतीति, रोरूयमाणशब्दपूर्वाद् द्रवतेर्वा 'रोदेर्णिलुक् च' (उ० २।२२)—इति रक्। स हि शत्रुकलत्राणि रोदयति रुदेरेव वा णिजन्तात् बाहुलकाद्रक्। 'इन्द्रः किं पितरं प्रजापतिमिथुना चिच्छेद तमनुशोचन्नरुदद् यदरुदत्तद्रुद्रस्य रुद्रत्वम्—(बृ० आ० ३, ८, ४)—इति काठकम्। 'यदरोदीत् तद्रुद्रस्य रुद्रत्वम्' इति हारिद्रवकम्। "इमा रुद्राय स्थिरधन्वने गिरः"—(ऋग्वेद ७।४६।१)।

Bhava—is a name of Rudra which corresponds to the Greek *Phoebus*. *Aditi*, according to one view,—"the expanse of the sky", to others, "the endless", "widespreading earth". The etymology, as given by Devarāja Yajwa, thus, (p. 395, 10)—

'सर्वास्त्रियो मध्यमस्थाना पुमान् वायुश्च सर्वशः। गणाश्च सर्वे मरुत इति वृद्धानुशासनम्।' अदितिः 'दीङ् क्षये' (दि० आ)। 'कृत्यल्युटो बहुलम्' (पाः ३।३।११३) इति कर्त्तरि क्तिनि छान्दसं ह्रस्वत्वम् नञ्समासः। अदितिः सकलप्रपञ्चधारणेष्वदीना न खिद्यते इत्यर्थः। 'अदितिरदीना'—(निरु० ४।२२) इत्यत्र भाष्ये स्कन्दस्वामी—'यद्यपि नञ्पूर्वात्द्यतेः क्तिनि 'द्यति-स्यति-मास्थाम्', &c. (पाः ७।४।४०)—इतीत्वे च रूपं सिध्यति, तथापि द्यतेर्नित्यमपूर्वादर्थान्वयाच्च 'दीङ् क्षये' (दि० आ०) इत्यस्यैवेदं छान्दसं रूपं द्रष्टव्यम्। तथाचोक्तम्—'न संस्कारमाद्रियेत अर्थो नित्यः परीक्षेत' (म० भा०)—इति। "देवेभ्यो अदितये स्यो नम्"—

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[1] For the characteristics and functions of this god, vide—Muir's, *Sanskrit Texts*, Vol. V, Sec. V; Macdonell's, *Vedic mythology*, 12; Hopkin's, *The Religions of India*, pp. 64-72; Uru-w-na in Boghazkōi inscription; Macdonell's and Keith's, *Vedic Index*. Vol. I, p. viii; Moulton's, *Early Zoroastrianism*, p. 6; Varuṇa—Greek *Ouranos*; Muir's, *Sanskrit Texts*, Vol. V, p. 76; Bloomfield's, *Religion of the Veda*, p. 136.

[2] Vide—E. Arbman, "*Rudra Untersuchungen zum altindischen Glauben und Kultus*", Uppsala, 1922.

(ऋग्वेद, १०।११०।४), "तमम्रक्षन्त वाजिनमुपस्थे अदितेरधि"—(ऋग्वेद, ८।२६।१) इति निगमौ । Sāyaṇa comments on the word, "अदितिरखण्डनीया अदीना वा देवमाता"—(Rv. 1, 115, 6).[1]

The two Aśvins—Greek *Dioskuri*, and also reappear in Germanic and Lettic mythology. According to some, "heaven and earth", to another, "day and night", to the third, "the two twilights". Again, to others, "sun and moon", according to some scholars, "the morning and evening stars", and, lastly, to others, "the constellation of Gemini". The etymology of the word अश्विनौ is thus, (p. 399)—

अश्विनौ । अश्वशब्दो व्याख्यातोऽश्वनामसु । भाषा सर्वं जगत् व्याप्नुतः । अवश्यायरसेन मध्यमः, तेजसोत्तमः । द्यावापृथिव्यावहोरात्रे सूर्याचन्द्रमसौवाश्विशब्दाभिधेयौ । द्यौः ज्योतिषाप्लुते, पृथिवी रसेनानलक्षणेन । अहर्ज्योतिषा, रात्रिरवश्यायेन । सूर्यो ज्योतिषा चन्द्रमा रसेनाह्लादादिना वा । अश्वैस्तुरङ्गैस्तद्वन्तौ राजानौ पुण्यकृतावित्यौर्णवाभः । "कदेदमश्विना युवम्"—(निरु० १२।२) । तयोः कालः ऊर्द्ध्वमर्द्धरात्रात् सूर्योदयपर्य्यन्तः । तस्मिन्नान्यादेवता उपास्ते ।[2]

There were, however, some deities that have become divine beings, and they all appear in the later interpolation of the tenth maṇḍala of the Ṛig Veda, thus, *Viśvakarman* (X, 81-82)—"the world master-builder", *Prajāpati* (X, 121)—"the lord of creatures", *Śraddhā* (X, 151)—"faith", *Manyu* (X, 83-84)—"anger", *the Ṛbhus* (III, 60, 1; IV, 33, 3-4; IV, 35, 3 ; IV, 36, 4)—"the elves", *the Apsaras* "the nymphs", *the Gāndharvas*—"a kind of forest and field spirits", *Yama* (X, 14, 135, 154)—Avesta *Yima*, "the first human being, the primeval ancestor of the human race." *Dāsa or Dasyu*—"the Non-Aryan aboriginal inhabitants", (also, "*Rākṣas* or *Rākṣasas* of the later Indian literature") signifying all sorts of mischievous, ghostly beings. The words दास and दस्यु are used in the Ṛig Veda of all the enemies of the Aryans, whether demons or men. Sāyaṇa takes the same to be the Non-Aryan tribes. So also, Grassmann, Roth translates "demon brood".[1]

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[1] Vide—Muir's, *Sanskrit Texts*, Vol. V, Sec. XV; Macdonell's, *Vedic Mythology*, pp. 120-123; for a different view, see Bloomfield's, *Religion of the Veda*, p. 131.

[2] Vide- Muir's, *Sanskrit Texts*, Vol. V, Sec. XV; Macdonell's, *Vedic Mythology*, pp. 49-54; Bloomfield's, *Religion of the Veda*, pp. 110-114; Hopkin's, *The Religion of India*, pp. 80-86; Nāsatyas—na-sa-at-ti-ia in Boghaz-köi inscription (also see—Macdonell's and Keith's, *Vedic Index*, Vol. I, preface, p. ix).

Pūṣan is sun-god, "Lord of the ways", "the protector of travellers", "the god who knows all the paths", "also brings back to the right path the cattle which have strayed". Sāyaṇa interprets the word **पूषा,** thus—**"जगत्पोषक पृथिव्याभिमानि देवः"**. This seems to be a fallacious argument Yāska says in his Nirukta, **"सर्वेषां भूतानां गोपायिता आदित्यः"** (VII, 9, 1). This is justifiable, and it is accepted by the learned. Max Müller calls it—"the sun as viewed by shepherds". Pūṣaṇ is invoked in eight hymns and is mentioned 120 times. He is all powerful, shining, bestower of wealth and destroyer of foes. He is the guide of noble path and the saver of it, too (Rv. X, 17, 3-6). He is one of the twelve **आदित्य**s[2]. The etymology of the word is as follows—

पूषा। 'पुष्पुष्टौ' (भू० दि० क्र्यादि०प)। 'श्वन्नुक्षन्पूषन्' &c. (उ० १।१५८)—इत्यादिना कनिन्-प्रत्ययान्तो निपात्यते, निपातनादुपधायादीर्घः। पुष्यति धान्यादिभिः समृद्धा भवति पोषयतिवान्नैः प्रजाः। "सर्वार्थपोषणात् पूषा"—इति भट्टभास्करमिश्रः। तथा, "पृथिवी न्यवर्त्तयत् सोषधीभिर्वनस्पतिभिरपुष्यत्"—इति श्रुतिः। यद्वा, 'पुष धारणे' (चु० प०)—इति धातुः। धारयति सर्वाणि भूतानि पोषयत्याभरणानीति। यथा,—"आ पूषञ्चित्रबर्हिषम्" (ऋग्वेद, १।२३।१३)—इत्यत्र माधवः—"पूषा पोषयतीति तस्य प्रत्यक्षं रूपम्"। "पूषात्वेतो नयतु हस्तगृह्या" (ऋ, १०।८५।२६)—इति। "स्वरस्वत्यै पूष्णेऽग्नये स्वाहा" (वा० सं ४।३) इति निगमः।

Nirukta XII, 17, 10:

अथ यद्रश्मिपोषं पुष्यति तत् पूषा भवति।

Amara:

विकर्त्तनार्कमार्त्तण्डमिहिरारुण पूषणः।

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[1] Vide—A. A. Macdonell's and A. B. Keith's, *Vedic Index*, Vol. I, p. 356; Macdonell's, *Vedic Mythology*, p. 157; *Tribes and Castes of the Central Provinces*, Vol. I, pp. 16-17; Muir's—*Sanskrit Texts*, ii, pp. 558 ff.

Curious readers may read the article on "Parjanya" which was written by the scholar *par excellence*, the living encyclopaedia, the most impressive teacher of Law of his time, being his mastery of "allusions and quotations from various languages of East and West", Prof. Avināśa Chandra Guha, M.A., B.L. of University Law College, Calcutta, which was published in "The Calcutta Review", Vol. 136 : No. 2, August, 1955, pp. 199-204 in this connection.

[2] For characteristics of the deity, vide—Macdonell's, *Vedic Mythology*, 16 pp. 35-37); Muir's, *Sanskrit Texts*, Vol. V, Sec. xii; Bergaigne quoted in Ragozin's, *Vedic India*, pp. 235-236.

Puruṣottoma Deva:

(त्रिकाण्ड शेषः) : पूषण्वत् सूर्ययुक्ते पृथिवीयुक्ते च ।

Soma—Etymologically Soma=Haôma (Zend Āvestā) means "pressed juice", being derived from the root su=hu, "to press". The religion of the Ṛig Veda is mainly based on offering libation of Soma juice in the sacrifices. Hence, Soma occupies an eminent place among the Vedic deities. The Ninth Maṇḍala of the Ṛig Veda is praised in honour of Soma. The Sāma Veda derives its contents mainly from it. In the Sāma Veda, only the process of Soma sacrifice is observed. Soma is invoked in 120 hymns. Among others, only in 6 hymns he is invoked with Indra, Agni, Pūṣaṇ, and Rudra. Judged by these hymns, the place of Soma ought to be by the side of Agni in importance. In the Ṛig Veda (I, 14, 4) Soma is described as delightful in taste and vigour. It is a plant growing on **मूजवान्** mountains (X, 34, 1). The juice of Soma is a stimulating tonic, being mixed with Avenin and Strychnine Glycerophosphate as has been analysed by the experts in medicine. It is a divine ambrosia. By drinking it, a mortal becomes immortal (I, 91, 1, 6 ; IX, 108, 3). It cures the diseases and removes all the deformities of the limbs (VIII, 48, 3 ; X, 25, 11). The juice of Soma is akin to milk and turbidity in nature **"सन्तेपयांसिसमुचन्तु राजा"**. It is colourless like water as has been seen from the text of the Ṛig Veda (I. 91, 3), thus—

"राज्ञो नु ते वरुणस्य व्रतानि बृहद्गभीरं तव सोम धाम"

Water is mixed with Soma juice. The structure of Soma is somewhat like **पूतिका** (Botanic Name—Guilandina bonduc ; in Hindusthān **पोइका शाक** ; in Guzrāt **पोखी, पोथी** ; in Mahārâstra **मायाळु, लघु** & **थोर** ; in Bombay **सोमवल्ली** ; in English—Red Malabar Night shade ; in physician's surname—The Moon plant, A Potherb), because in absence of Soma plant, the **पूतिका** is substituted for it—**"सोमाभावे पूतिकामभिषुणुयात्" (श्रुतिः)** । The texts of **षड्विंश** Brāhmaṇa of the Sāma Veda and other Brāhmaṇas of the Vedas spoke of, in many places, the substitution of **पूतिका** for **सोम** । The Soma is a fibrous plant (Rv. I, 91, 17) :—

"आप्यायस्व मन्दितम सोम विश्वेभिरं शुभिः ।
भवा नः सुश्रव स्तमः सखा वृधे ॥"

Among the manifold qualities of Soma, stringency and destroyer of diseases are the most prominent: "ग॒य॒स्फानो॑ अमीव॒ व॑सुवित् पु॒॑ष्टि॒वर्द्ध॑नः" (I, 91, 12). According to Dr. Martin Haug, Ph.D., the Soma is bitter, bad in smell and intoxicating in nature. He describes the plant, thus—"The plant which is at present used by the sacrificial priests of the Dekkhan at the Soma feast, is not the Soma of the Vedas, but appears to belong to the same order. It grows on hills in the neighbourhood of Poona to the height of about 4 to 5 feet, and forms a kind of bush, consisting of a certain number of shoots, all coming from the same root; their stem is solid like wood; the bark greyish; they are without leaves, the sap appears whitish, has a very stringent taste, is bitter, but not sour; it is a very nasty drink, and has some intoxicating effect. I tasted it several times, but it was impossible for me to drink more than some tea spoonfuls.[1] Its juice was the favourite drink of the Aryans in the Vedic times. There are divergences of opinion regarding the morphological structure of the Soma plant. Christian Lassen, John Muir, Rudolf Roth, Martin Haug, Arthur A. Macdonell, Alfred Hillebrandt, etc., could not come to the unanimous opinion on it. They hold that the Soma plant may be *Sarcostemma viminale* or *Sacostema vinalis* or *Sarcostemma brevistigma* or *Sarcostemma acidum* or *Asclepias acidum* or *Asclepias acida*. We suppose that the Soma plant may come to the *N. O. Asclepias acidum*, or *Asclepiadaceae* (Dicotyledon—Sub-class II, Gamopetalae or Corolliflorae) because what is described in the Veda regarding the structure is akin to it. Reference is made in the "Flora Indica" (an authoritative treatise on descriptions of Indian plants) by the Reverend Dr. Carey.

As the plant is very important to the study of the Vedas, we give below the morphological structure *literatim* from "Flora Indica": Leafless. *Umbellets* terminal simple. Soma-lata in Sanscrit, rendered Soon by *Wilkins* in his translation of the *Bhagavat Geeta, p. 80* and *note 42.*

Cynanchium viminale. *Willd* I. 1252.

Teling. Tiga-tshomoodoo.

Beng. Bramee or Shom-lota.

A native of hedges, forests, &c. but by no means common.

Stems—twining, woody. *Branches* and *branchlets* most numerous, cylindric and smooth; particularly the youngest shoots, and they are generally pendulous when not supported; naked and succulent, like those of *Euphorbia Tirucalli.*

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[1] Vide—*Ait. Br.*, Vol. II, p. 489 (foot-note); Ed. M. Haug, Ph.D. Bombay, 1863.

Leaves scarcely the rudiments of any to be seen.

Flowers small, pure white, fragrant, pedicelled, collected round the extremities of the branchlets, in the form of elegant, small, simple umbellets.

Calyx small, five-parted, star-like. *Corol* flat seemingly five-petioled, as the fissures are continued close to the base.

Nectary enlarged at the base in form of a cup, on which rests five, large fleshy incurved, undivided, white segments.

Stamens and *pistil*, as in the germs.

Follicles, I never saw them.

This plant yields a larger portion of very pure milky juice than any other I know ; and what is rare, it is of a mild nature, and acid taste. The native travellers' often suck the tender shoots to allay their thirst.[1]

Soma is an all-powerful Being (Rv. IX, 101, 7 ; IX, 103, 4).[2] The etymology of the word **सोम** as given by Devarāj Yajwa, thus :

सोमः । 'षुञ् अभिषवे' (स्वा० उ०) । 'अर्त्तिस्तुसुहुसृधृक्षि', &c. **(उ० १।१३८)—इति मन् । सूयते सोमः । "पवस्व सोम धारया" (ऋग्वेद ९।१।१) ।**

Nirukta, XI, 2 : **ओषधिः सोमः सुनोतेर्यदेनमभिषुण्वन्ति ।**

Bhaṭṭa Kṣīrasvāmin (flourished towards the latter half of the 11th Century, the oldest and most important commentator of Amarakoṣa) comments on the word **सोम,** thus :

सूते ऽमृतं सोमः, सूयते वा, नवो नवो भवति जायमानः इति श्रुतेः ।

Vṛhaspati (surnamed *Mukuṭa* or *Rāyamukuṭamaṇi*, another excellent commentator of Amarakoṣa composed in A.C. 1431, called *Padacandrikā*)[3] comments, thus :

सूयते जायते 'नवो नवो भवति जायमानः' इति श्रुतेः, सूयते यज्ञाङ्गस्नानं वा करोति, सूतेऽमृतं वा सोम इति 'षुञ् अभिषवे' ।

Hem Candra : *Medinī* : *Bhāvaprakāśa of Bhāva Miśra* :

सोमलतारसः । सोमलतौषधिः । सोमवल्ली सोमलता सोमक्षीरी द्विजप्रिया ।
सोमवल्ली त्रिदोषघ्नी कटुस्तिक्ता रसायनी ॥

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[1] Vide—William Roxburgh, M.D., F.R.S.E., etc., etc.'s *Flora Indica*, Reprinted literatim from Carey's Edition of 1832, Cal., 1874, pp. 251-252 (Page Carey Ed. II. 32).

[2] For further characteristics of Soma, vide—Macdoneil's, *Vedic Mythology*, 37, pp. 104-114 ; Hopkin's, *Religions of India*, pp. 112-126 ; Bloomfield's, *Religion of the Veda*, pp. 146-147 ; 174 ; Umeś Chandra Vaṭavyāla's *Veda-Praveśikā*, Calcutta, a Bengali book, (article on Soma) pp. 19-58, etc. ; *Bhāratavarṣa* (a Bengali monthly journal), Chaitra, 1329, B. S., p. 577 ; for preparation, vide Rv. IX, 66 ; *Ṛg Veda*, Wilson, Vol. V, p. 299 ; *Vedic Index*, Vols. I, II (pp. 474-479), Macdonell & Keith.

[3] The author, a native of Rāḍhā in Bengal, was son of Govinda and father of Viśrāma, Rāma, and others. (See Catalogue of Sanskrit MSS in the Library of the India Office by Julius Eggeling, Ph. D., London, 1887, introductory verses, p. 271).

In fine, we may say that the study of the Veda and its interpretations cannot be done without able guidance and direction under *the Āchārya* who must be an erudite scholar in all branches of the Veda. Inspite of his defects, Sāyaṇa learnt Vedic lessons principally from his *Guru* **विद्यारण्यस्वामी** who, was considered to be the best spirit in the ocean of Learning during the time of Sāyaṇa's exegesis of the Vedas. It was through his inspiration that Sāyaṇa performed his arduous work in quite a masterly manner, and the whole world praised him as a torch-bearer of divine light for the onward march of humanity. Let India, the germ of ancient civilisation, learning, and culture, once more rise to the occasion in her splendour and sublimity to remove the undeserved and uncalled vituperation stigmatised upon the shoulders of the ancient and modern scholiasts, brush aside the ill-digested and half-baked theories of the *Western Vaidikas* which are stored in the mind of the readers of the ancient sacred lore of the Aryans.[1]

इति वाकरगञ्जनगराधीनरामचन्द्रपुरग्रामवासिकाश्यपगोत्रसम्भूतकायस्थकुलमौक्तिकस्य वरिशालपुर्यांम् धर्म्माधिकरणस्य व्यवहारराजप्रख्यातभूस्वामिधार्म्मिकप्रवरसदयहृदयोन्नतमनसः स्वरूपचन्द्रगुहचतुधुरिणः पुत्रस्य अशेषशास्त्रज्ञानसम्पन्नप्राच्यप्रतीच्यनानाभाषाविशारदप्रकृष्टशब्दतत्त्ववित्प्रात्नतत्त्विकप्ररूढ़प्रज्ञ कलिकाताहाइकोर्टस्थव्यवहाराभिज्ञस्य एम्-ए-वि-एल्इत्युपाधिमण्डितपितृगुणसमन्वितस्य अविनाशचन्द्रगुहचतुर्धुरिणः ज्येष्ठतनयकलिकाताहाइकोर्टस्थव्यवहारिकस्य एम्-ए-वि-एल्इत्युपाधिशोभितनरेन्द्रनाथगुहचतुर्धुरिणः द्वितीयसहोदरस्य वि-एस्सिएम्-विउपाधिविभूषितचिकित्सकप्रवीरस्य श्रीअरुणेन्द्रनाथगुहचतुर्धुरिणः एम्-एइत्युपाधिसमुद्भासितसरकारीउच्चपदस्थवृत्तिभोगिनः श्रीनृपेन्द्रनाथाग्रजतृतीयसहोदरश्रीद्विजेन्द्रनाथगुहचतुधुरिणा विरचितवेदव्याख्यातॄणां प्राचीनार्व्वाचीनञ्च नामआंग्लोभाषायां ग्रन्थोऽयं समाप्तः ।

वरिशालपत्तनस्य स्वरूपचन्द्रगुहरोड् नाम विथिखायामवस्थितायां
"स्वरूपवावुर वासा"
इत्यभिधेया उपकारिका ।

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[1] *I express my indebtedness to authors whose works are frequently quoted or referred to in the memoir.*—Dvijendra Nath Guha Chaudhuri.

AN INTRODUCTION TO THE GANDHIJI'S CONCEPT OF STATE

(An analysis of the background)

PROF. PRIYATOSH MAITRA

The background of Gandhiji's concept of State can be traced from the two of his principal feelings, one is his deep fascination and attraction for the ancient India's self-sufficient self-administered village community life, and the other, his extreme aversion towards the efforts manifested throughout the contemporary world in the centralisation of power in the hands of the State.

Respect for the values of man lies at the root of these two feelings. Questions and doubts regarding the existing order and protests as well against it raised by Gandhiji have come from this respect for the values of man and humanity.

Gandhiji has started his voyage at the very critical juncture of our civilisation. In these days of crisis, conflicts and clashes of interests between states and between classes, and lusts for power have become so formidable and dangerous that all the natural claims and aspirations of humanity are being crushed to dust. Indeed, there is nothing in this world so humiliated as the human individual. The claims of individuality of common men are denied everywhere, no matter whether it is a State of the vested interests, a revolutionary class State, or it is a revolutionary class or party. Individual is to live a life of extreme humiliation surrendering his natural claims of personality to the dictates of the whole, one to many and have-nots to the haves. Somewhere in the name of State, somewhere in the name of general will, somewhere in the name of democracy and freedom and in some other places in the name of religion, class or party, might is gradually becoming right. Gandhism is not ignoring any of these as ideals but Gandhism wants to raise the claims of common man and of humanism above all claims and idealisms. Because according to Gandhism, the supreme consideration is man. We cannot but conclude that in these days of crisis of capitalism when the natural claims of eternal man are being denied everywhere, Gandhism has got an emmense value from the point of view of humanitarianism. In this connection we remember the name of another great revolutionary humanist Philosopher and he is Karl

Marx. In his philosophy too, freedom of man and mind is the principal theme. In the intellectual life Renaissance and in the material life revolutionary development of Science in the 16th Century have released man both subjectively and objectively from the shackles of superstition, blind faith and from the rule of Church, Preceptor, and Bible, Vedas and thereby, laid down the path of freedom of man and his mind. But unfortunately because of the growth of capitalistic economic structure after industrial revolution, again the existence of man as an individual and the values of man began to be denied. At this juncture we got Marxism wherein we found the direction towards the path of freedom of man and his mind in the new environment.

Gorkey wrote about the place of man in Marxism "The supreme being for man is man himself. Consequently all relations, all conditions, in which man is a humiliated enslaved despised creature, must be destroyed. Karl Marx wanted to realise all his truths through one truth, as Gorkey writes, "Karl Marx reduced all truths to one specific truth that must be thought about by the new historical force, the working class—the emancipation of man."

Thus, though the objective of the two Great Philosophers seems to be similar, yet the paths as envisaged by them appear to be completely different from each other—rather opposite. Marxism wanted to establish man through the materialistic interpretation of history, while historical analysis has no place in Gandhism. Gandhism is founded upon the faith in and respect for the Indian tradition and religion, 'Bhaktibad', ancient human morality and self-sufficient, self-administered ancient village community life on the one hand and on the other, decentralised economy of production and distribution. Gandhiji has never analysed any of the social, political and economic problems from the point of view of history. Prof. Dantwalla has rightly observed about Gandhian approach to social problems, when he says "Gandhiji's approach is mainly ethical and therefore non-scientific". Gandhiji has tried to understand all problems from the point of view of natural human feelings and instinct not connected with historical development. He has always been pained with the class-distinction, class-hatred and class-conflicts of the modern capitalist society. He has become restless with the sincere feelings for the oppressed and with the thought as to how to eliminate their sufferings. Sometimes he has tried to console himself by inflicting suffering on himself. He has expressed sometimes his determination to wage war against the ways in which capitalism resting on Industrial Economy has tried to satisfy its avarice of exploitation of man.

He being purturbed at the growing tendency towards centralisation of Power in the State in all sorts of governments, democratic, fascist or communist, suggested decentralisation of State Power and felt that this was the immediate task. He did not view any of the problems from the background of history. He said, "I suggest that if India is to evolve along non-violent lines, it will have to decentralise many things. Centralisation can not be sustained and defended without adequate force; simple houses from which there is nothing to take away require no policing, the palaces of bricks must have strong guards to protect them against dacoity. So must huge factories. Rurally organised India will run less risk of foreign invasion than urbanised India well-equipped with military, naval and airforce.

(*Harijan*, 30. 12. 34).

Gandhiji has even revolted against the industrial civilisation where it has helped to establish capitalism an ism of avarice and exploitation. Gandhiji here has turned back to the previous pages of history—towards the simple, easy and self-sufficient living of the rural community of the ancient agricultural India. Karl Marx discovered in this self-sufficient ancient agricultural life of India, the secret of unchangeableness of Asiatic Society. He wrote, the simplicity supplies the key to the secret of unchangeableness of the Asiatic Societies, unchangeableness in such striking contrast with the constant dissolution and re-founding of Asiatic States and never ceasing changes of dynasties; the structures of economical elements of Society remain untouched by stern clouds of political sky.

But this "unchangeable" Indian Society had to face defeat at the hands of the British Industrial Capitalist Class at the beginning of the 19th-Century. By the blow of this new class coming from abroad India's ancient agricultural village community which resisted all the invasions of various dynasties, Turks, Tatars, Moguls from time to time, was shattered into pieces. To Marx's scientific mind and thinking this appeared to be natural. In the defeat of old ancient social system of agricultural India to the rising industrial Class Marx saw the historical role of social evolution.

But to Gandhiji, it was an unhappy incident. Because to Gandhiji, the self-sufficient and self-administered village community life was something eternal and a never changeable God-bestowed system. Hence Gandhiji opposed the British Rule in India which was responsible for the downfall of India's eternal village community life and he thought its replacement by the same ancient village community life would be the right and proper step to oppose British rule. The path he adopted to achieve this object was as antiquated as that old social system and was also related to that system.

The source of Gandhiji's path was the age of Upanishad. At that time Aryan colonisation crossing the Ganges Valley built up a stable social system together with the help of Non-Aryans. Along with it naturally indication of the dawan of new social mind was being felt. Vedic God and priests and Philosophy, culture and practice of life of the day, were not being able to satisfy this new social mind. The gap between, subjective and objective life was being widened. Many confusions arose in the social life. Naturally, the need for reorientation of the philosophy of life was being intensely felt. Thus originated Upanishad. The scholars and philosophers of the modern age feel that this was the background of the origin of Upanishad.

Some scholars observe that in those days with the growth of private property class-distinction took place resulting into the institution of a kind of individual worship and search for truth detatched and disconnected from the social environment and struggle for existence. There was instituted the practice of individual priesthood in place of vedic practice of socially instituted worship. There originated a new path and that was the conquest of environment through the practice of individual devotional austerities. Sacrifice, devotional austerity and penance detatched from the objective condition of our social life became the means.

Gandhiji adopted this path of sacrifice and devotional austerities. Hence the first step of his struggle was to inspire an internal revolution in the mind of the masses—a 'tapasya' to ignore the environment caused by British Rule. He made this the principal Mantra in his life. This 'sadhan margh' was thus the principal source of explaining and analysing all social and political problems and questions with the help of religion and morality—the course which he followed throughout his life. India's social mind has intimate knowledge of this sadhan marga and that too is a knowledge of failure.

In the days of Upanishad even,. individual Tapashya could not bring about the solution of the social problem of those days. Origin of the materialistic Lokayat Philosophy, theism at that time and in the later period, Buddhism, Jainism bore the proof of this failure.

AT THE CLOSE OF THE DAY

(Translation of "Sindhu-Tate" By Kavisekhar Kalidas Roy)

SUDHANSU KUMAR BASU, M.A., B.T.
Headmaster, Jadavapur Higher Secondary School.

The day is drawing to a close ; the sky puts on a ruddy wrapper
And the shadow lengthens ;
The tantalizing mirage giddies my vision
Of ambrosial gold conjured.
Whose curse it was that descended on my head at the very outset,
I fail to trace.
My life-long journey littered with futilities abounding,
As appears to my retrospection.
I lost not a while, beneath a wayside pipal seated ; with the caravan
I sojourned days and nights.
A little recess now granted, I look ahead and explore my past
To shed repining tears.
Chasing the golden stag, I drained my life's cup to the dregs,
I aimed at fulfilment in life, but by-passed it,
My purpose mislaid.
How many vernal nights slipped away unaccounted for,
I recall to-day,
How many mango-blossoms have withered uselessly
In slighting disregard,
I think sedulously of grand revelries, good many, of early autumn, morns,
I have missed.
I with gusto did not mark the animation of the harbage
Sucking insolation ;
And many Sravan eves, enervating, lost their appeals,
As I dismissed them ;
I dissociated myself from assemblies of kins,
Eloquently vocal with gossips,
I had not the leisure to feast my eyes with pleasing sights
I have sustained two-fold loss—the snug nestling of home
And the glimpse of the azure sky aglow.
When a child warmly sought my contact, I complained of time
And withheld dalliance ;

I forgot, the pendency of a twig on its bole
Is not its perpetual feature,
All my zeal founders in the fag end of my life,
When I retire.
I do, so, shed tears on the rubbish heap of my wasted efforts.
Bidding Good-bye to the Madhabi-grove, now, the domestic Tulsi
altar
I do yearn for at this dwindling days. What has been harvested—
I take stock. The desert loomsl arge ahead.

Reviews and Notices of Books

A Descriptive Catalogue of the Sanskrit Manuscripts in the collections of the Asiatic Society—By M. M. Hara Prasada Sastri, Revised and Edited by Narendra Chandra Vedantatirtha and Chintaharan Chakravarti, Vol. XI: Philosophy was published by the Asiatic Society, Calcutta in the month of December, 1957. It contains 998 pages. Its price is Rs. 36.

From the preface we learn that the present work has seen the light of the day owing to the ungrudging by continuous labour of Pandit Narendra Chandra Vedantatirtha The circle of Sanskrit scholars and other scholars interested in Indian Philosophy will surely congralutate Pandit Vedantatitha for this great work. The contents, prepared by him, will be very useful. Introduction will help the general readers to form a general idea about the growth and development of Indian Philosophy. The list of important manuscripts added towards the end of Introduction will be highly appreciated by the scholars of Indian Philosophy, engaged in research work.

A more detailed descriptive catalogue of unpublished manuscripts is a long-felt want. This book will give a partial satisfaction to the readers. The description of a particular manuscript, given in it, is in complete It touches the outer-fringe of a manuscript but not its core. But very little light has been thrown on its distinct contents. The work has been more or less mechanical but not logical. The present editors are not responsible for this defect.

May I invite the attention of the authorities of the Asiatic Society for preparation and publication of a catalogue of important unpublished manuscripts of Indian Philosophy, which will enlighten the searching readers with all useful informations contained in them.

J. B.

Ourselves

SPECIAL CONVOCATION

A Special Convocation was held in the Senate House of the University on Wednesday, the 20th January, 1960, at 10 A.M. to confer, *Honoris Causa,* on Dr. Niels Bohr, N.L., the Degree of Doctor of Science. Professor Bohr addressing the Convocation said that Civilization today was facing a serious challenge, but this could be met if all people united in good will and mutual confidence. Explorations of atoms had opened up unique opportunities for promoting human welfare. The need of the hour is the use of science for good of man. Every increase in experience, knowledge and ability meant an increase in our responsibilities for fulfilling this duty by developing the different branches of science and eliminating the new danger of misuse of the formidable powers of nature which had come into human hands. Indians, Dr. Bohr said had an imporant role to play in this great cause and endeavour.

Dr. Bohr has followed closely for many years the developments in modern Science which have given him a new insight into atomic power and behaviour. This has also made him realise that in the great drama of existence, human-beings are spectators and actors at the same time. The challenge had to be met by common effort to utilize the new forces for the benefit of man. Scientists had to build on the foundations of previous generations, and to decide in common how best to increase the inheritance of knowledge they had acquired. It was now necessary that the voices of the scientists should ring throughout the world proclaiming that atomic power, of which they were masters, would be utilized only for security and human welfare. It should not be used to destroy the human race and the world in which the ethical and moral standards were wavering and social, economic and cultural values were being challenged. The concept of good life need not be vulnerable to attacks from science. A good life has been defined by Bertrand Russell as "one which is inspired by love and guided by scientific knowledge". From this point of view, good life and science are not antagonistic. It is the function of good life to humanize science as much as it is the functions of science to build correct foundation of good life. The social function science merges in good life. In the modern world it has become very necessary to recognize that the spirit in man is the ultimate and irrefutable arbiter of the values of good life.

Notifications

UNIVERSITY OF CALCUTTA

Notification.

No. C/1165/156 (Affl.)

It is hereby notified for general information that in extension of the affiliation already granted, the Vidyasagar College for Women, Calcutta has been affiliated to the I.A., I Sc , B.A. and B.Sc. standards in the following subjects with effect from the session 1960-61, *i e.*, with permission to present candidates in these subjects at the I.A., I.Sc., B.A. and B.Sc., examinations mentioned, from 1962 and not earlier.

I.A.—English, Vernacular (Bengali & Hindi), Civics, Logic, History, Mathematics, Sanskrit, Commercial Geography, Geography, Botany and Biology.

I.Sc.—English, Vernacular (Bengali & Hindi), Physics, Chemistry, Mathematics, Botany, Biology and Geography.

B.A.—English (Pass & Honours), Vernacular (Bengali & Hindi), Bengali (Pass & Honours), Hindi 2nd Language, Sanskrit, Economics (Pass & Honours), Philosophy, Mathematics, History (Pass & Honours), Botany (Pass & Honours), and Geography.

B.Sc.—Physics, Chemistry, Mathematics, Geography, Botany (Pass & Honours), Physiology & Zoology.

Senate House,
Calcutta.
The 15th January, 1960.

D. CHAKRAVARTI,
Registrar.

CALCUTTA UNIVERSITY

The following are the orders of the Vice-Chancellor and Syndicate with regard to the cases of breach of discipline arising out of the undernoted examinations :

FIRST M. B. B. S. EXAMINATION, JUNE, 1959

The First M. B. B. S. Examination, June, 1959 of Ajitkumar Bandyopadhyay (Roll Cal. N.No.3) and Gopalchandra Mandal (Roll Cal. N.No.5) has been cancelled and they have been debarred from appearing at any examination of this University until May, 1960. (Syndicate, dated 27th November, 1959).

FINAL M. B. B. S. EXAMINATION, JUNE, 1959

The Final M.B.B.S. Examination, June, 1959 of Gurucharan Chattopadhyay (Roll Cal. N.No. 181) has been cancelled (Syndicate, dated 12th December, 1959).

PRELIMINARY EXAMINATION IN LAW, JULY, 1959

The Preliminary Examination in Law, July, 1959 of Manik Chand Khast (Roll Cal. New) No. 672) and Binaykrishna Sarkar (Roll Cal. N.No. 52) has been cancelled and they have been debarred from appearing at the Preliminary Examination in Law, to be held in January, 1960 (Syndicate, dated 12th December, 1959).

INTERMEDIATE EXAMINATION IN LAW, JULY, 1959

The Intermediate Examination in Law, July, 1959 of Murarji Thakkar (Roll Cal. No. 260) has been cancelled and he has been debarred from appearing at the Intermediate Examination in Law, to be held in January, 1960 (Syndicate, dated 12th December, 1959).

DIPLOMA IN LIBRARIANSHIP EXAMINATION, AUGUST, 1959

The Diploma in Librarianship Examination, August, 1959 of Kiranchandra Barman Roll Cal. No. 50) has been cancelled (Syndicate, dated, 27th November, 1959).

B.T. EXAMINATION, 1959

The B. T. Examination, 1959 of Kumudbandhu Raychaudhuri (Roll Cal. No. 502) has been cancelled and he has been debarred from appearing at any examination of this University in 1960 and 1961 (Syndicate, dated 27th November, 1959).

Senate House,
Calcutta
The 14th December, 1959.

N. C. Roy,
Controller of Examinations.

SENATE HOUSE,
Calcutta.

No. Rts./R.A /Comp. I.Sc./Sept./59/3088
Syndicate, dt. 2. 1. 60.

The 4th January, 1960.

The Vice-Chancellor and Syndicate with regard to the cases of breach of discipline at the Compartmental I.Sc. Examination, September, 1959 :

The Compartmental I.Sc. Examination, September, 1959 of the undernoted candidates has been cancelled and they will be required to appear in all the papers again in case they sit for the I.Sc. Examination in any subsequent year :

1. Satish Kumar Dewan, Roll Cal. Comp. No. 164, Regtd. No. 8017 of 1957-58, (Scottish Church College).
2. Debkumar Mukhopadhyay, Roll Cal. Comp. No. 258, Regtd. No. 10918 of 1957-58, (Vidyasagar College).

N. C. ROY,
Controller of Examinations.

PANJAB UNIVERSITY, CHANDIGARH.

No : 720/7380 /59-G Dated June 17,1959.

I am to inform you that the Principal, Government College, Chandigarh, his *vide* letter No. 897, dated 8-4-1959, has expelled for two academic years, the following students with effect from 8-4-1959, for the reason/s mentioned against their names (Regulation 8) Panjab University Calendar 1957-58, Vol. III, page 136 :—

S. No.	Name & the Regd. No. of the student.	Father's name.	Class.	Reasons for expulsion.
1.	Amarjit Singh Gill (57-c-278)	Sh. Sucha Singh Gill	2nd Year	Gross misconduct.
2.	Santokh Singh (57-adm-187)	Sh. Jagir Singh	2nd year	Do.

Yours faithfully,

KESAR MALL,
Assistant Registrar (Cdn.),

ANDHRA UNIVERSITY

No: S3/3215/59.

Waltair, D/24-6-1959.

PROCEEDINGS OF THE SYNDICATE.

Sub : Misconduct at University Examinations—March-April, 1959.
Ref : Syndicate Resolution, Dated 12-6-1959.

ORDER

The results of the following candidates who have been found guilty of resorting to unfair means at the University Examinations held in March, 1959 are cancelled and they are debarred from appearing for any of the University Examinations for the periods noted against each.

No.	Name of the candidate.	Examn.	Reg. No.	Centre in which the candidate appeared for the Examn.	Period of rustication.
1.	2.	3.	4.	5.	6.
1.	B.R. Sambasiva Rao	Matriculation	192	W.G.B. College Bhimvaram.	Debarred for one year and permitted to appear for the University Examn. to be held in March, 1960 or thereafter
2.	G. Nirmaladevi	Pre-University	2993	Govt. College for Women, Guntur	Do
3.	J. Mohan	Do.	4120	P.R. College Kakinada	Do.
4.	B.V.R. Mohana Rao	B. Com.	1180	S R.R & C.V.R Govt. College VIJAYAWADA.	Debarred for two years and permitted to appear for the University Exmns., to be held in March, 1961 or thereafter.
5.	A. Krishna Rao	B. Com.	1395	Mrs. A.V.N. College. VISAKHAPATNAM	Do.

(By Order)

K. V. GOPALASWAMY,
Registrar.

ANDHRA UNIVERSITY

PROCEEDINGS OF THE SYNDICATE

No. S3/3215/59 Waltair, dated 24-6-'59.

Sub :—Examinations—University Examinations—March-April 1959.

Read : 1 Report dated 8-4-59 from the Principal and Chief Superintendent, University Examinations, V.R.S. College, Chirala against C. Krishnamurty, candidate with Reg. No. 645 of the B.A., Degree Examination.

2. Explanation dated 19-5-59 from C. Krishnamurty.

ORDER.

The result of C. Krishnamurty candidate with Reg. No. 645 of the B.A., Degree Examination, April, 1959 be cancelled and that he be debarred for a period of two years from taking any of the University Examinations. The candidate is permitted to take the Examination to be held in March, 1961 or thereafter.

(By order)

K. V. GOPALASWAMY,
Registrar.

BANARAS HINDU UNIVERSITY OFFICE OF THE REGISTRAR
R—AC—II/14
Registered A/D
(Academic)

This is to inform Shri Amal Kumar Mukherjee S/O Shri P. K. Mukherjee, B-5/28, Oudhgarbi, Varanasi that he has been rusticated for two years for using unfair means at his B.Sc. (Final) Examination of 1959 of the Banaras Hindu University, and that his 1959 Examination has been cancelled and he would not be permitted to appear at any of the University Examinations before 1961. *vide* Resolution No. 442 of the Standing Committee of the Academic Council, passed at its meeting held on the 24th June, 1959.

Yours faithfully,
Sd. Illegible
Registrar.

THE
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UNIVERSITY

GENIUS, ALCOHOL, TOXINS AND LUES

Edward Podolsky, M.D.

In addition to several others, chemical factors are involved in the creation of superior mental abilities. It is undoutedly true that a continuity of proper nutrition is quite an essential requirement for superior cortical functioning. Among other elements, a diet particularly rich in the vitamin B complex group is necessary for proper brain nutrition. The brain cannot function at its best in the absence of the vitamin B complex group.

A short time ago Dr. William Maurier evaluated the ability of two groups of rats to learn a maze. One group was fed on a vitamin B-poor diet. They experienced great difficulty in learning the simplest mazes. The other group, fed on a diet rich in vitamin B, learned the most difficult mazes with ease. Similar experiments on human beings have yielded identical results.

Dr. George Burr expresses the opinion that a diet rich in unsaturated fatty acids is a requirement for those individuals whose work involves precise and prolonged cortical activity. The articles of food which contain these fatty acids in greatest numbers are olive oil, lard, egg yolk, corn and animal fat.

In addition to the endogenous chemical factors, such as above, there are exogenous chemical factors carried into the body by external agents. Among the most profound chemical reactions are those produced by bacterial toxins. Physicians for a great many years have noted a very intimate relationship between the toxins generated by the causative agents of syphilis, tuberculosis and other diseases in the human body and their stimulation of the brain cells to greater mental activity.

Certain authoritites have frequently ascribed the stimulating powers of genius to the toxins of tuberculosis. Dr. Moorman particularly, has gone into this phenomenon quite extensively. Undoubedly there is a sort of restless agitation produced in certain phases of this disease.

Tuberculosis and literary genius seem to go well together. Robert Louis Stevenson, John Keats, Anton Chekov, Ralph Waldo Emerson, John Greenleak Whittier, are but a few of the literary giants who had this disease and who produced their greatest work while they had it. The three greatest German authors, Goethe, Heine and Schiller, suffered from tuberculosis. France gave us Rousseau, Balzac, Moliere and Voltaire, authors with a definite tubercular background. There have been a great many others.

What chemical substance in the bacillus of tuberculosis is responsible for kindling genius is not known. No one has been curious enough at this date to undertake an identification. Perhaps it may be some ferment, some unusually shapt catalyst which enters fiercely into chemical reactions that kindle the imagination and produce creative thinking of a very high order.

Syphilis is another disease which produces toxins which in some way bring about chemical reactions within the brain that are productive of superior creative imagination. Beethoven, Schopenhauer, Donizetti, Smetana, Eugene Sue, De Maupassant, Baudelaire, Mirabeau, are but a few of the men of great talent who produced their best work while syphilis in its active form ravaged their bodies.

Beethoven had acquired syphilis in his early twenties, and his entire active period in music was while he was under the influence of this disease. He underwent treatment of a sort, a rather ineffective regimen, but his musical genius remained undimmed, in spite of the fact that it was this disease which had robbed him of his most precious possession—his hearing.

The other musicians, Donizetti and Smetana, wrote their best music after they had become infected with syphilis. Smetana also lost his hearing, but this did not prevent him from composing "The Bartered Bride" and "Dalibir." Donizetti wrote his greatest operatic scores while lues generated its fearsome neural poisons in his system.

Eugene Sue was a physician, but he was best known as a writer, being the author of "The Mysteries of Paris." He acquired syphilis while in active practice. He gave up medicine when he began to suffer from tabes, and became an author. His novels were written while suffering from this disease.

De Maupassant was infected with syphilis at the age of 21. Cerebral disturbances became manifest in a short time. During the ten years that the leutic toxins saturated his system he wrote six major novels, 21 novelettes, two dramas and left behind him two unfinished novels. Half a year before his death he wrote his mother: "Never before in all my life has it been as easy to create as it is just now."

Similar was the case of Heinrich Heine, who had both syphilis and tuberculosis. He produced his immortal work when both these diseases were sapping his physical strength, but, on the contrary, were kindling his mental and creative abilities to their highest pitch.

Murger, the French novelist, died at the age of 39 of syphilis. He wrote his best and most widely read novel, "La Vie de Boheme," shortly before his death. Mirabeau, poet, politician and Frech revoluntionary leader, became infected with syphilis before he rose to his greatest heights as a poet and leader.

Two well-known painters, Van Gigh and Gauguin, both developed a new school of art because of their disease. Van Gogh was infected with syphilis in his early youth and died of its effects at the early age of 37. At 27 he became a painter when syphilis made its greatest inroads. The further the disease progressed the greater became his working capacity. Gauguin, founder of the modernistic school of painting, did his most original work when the *pallida* had thoroughly saturated his system with toxins.

Emil Behring was doing mediocre work until he became infected with syphilis. Then his genius was kindled, and even when paralyzed as a result of syphilis he founded the science of immunology. He received the Nobel Prize when syphilis has made its stamp on his system unmistakable.

Neitzshe, the German philosopher, was infected with syphilis when he was 25. It became severe when he was 44 and lasted for 12 years. It was during this time that he wrote his works on philosophy which carried his name to the far corners of the earth.

Alcohol is another chemical which seems to have an intimate relationship to superior mentation under certain conditions. Alcohol in rational moderal, and not to sordid excess, in certain instances seems to act as a sort of catalyst to creative thinking.

Morality is not a question to be discussed in this connection. When the facts are examined they speak for themselves. There is no doubt that alcohol has played a very interesting role in human affairs for many years.

History tells us that civilization first arose in the northern hemisphere, where it grew steadily, healthfully and sturdily in close association with the people who inhabited the northern hemisphere. These people seemed, for the most part, to be an alcohol drinking lot. On the other hand, civilization lagged woefully behind in the southern hemisphere, where alcohol for the most part was an unknown quantity.

In the same way the non-alcohol-drinking Gauls were unable to resist the alcohol-drinking and conquering Romans. Gaul was dry ; Rome was wet. Gaul was feeble and poorly civilized ; Rome was mighty and the center of civilization in those days. But during the tenth century civilization in the Rhine country began to rise rapidly. Alcohol had been introduced by the conquering Romans and found to be desirable.

In the East a similar thing happened When the Moslems drank wine the Golden Age of Eastern civilization was in full bloom. The immortal "Arabian Nights" was written ; mathematics was at a high stage of its development ; medicine and the sciences were making great progress. However, after the fifteenth century, when strong-willed fanatics got the controlling hand and prohibited the use of alcohol as a beverage, and turned the Moslem into a coffee-drinking people, civilization began to set in the East. In fact, so stupid had the Moslem coffee-drinkers become that they had to employ alcohol-drinking Copts to keep their accounts in workable order.

In later times historians observed the rise of the Dutch Republic was strongly coincident with the universal adoption of the widespread drinking of gin. With increasing popularity of the ethyliv liquid religious and political freedom became actualities. The arts and sciences began to flourish, and many important enterprises were undertaken.

The same is to be said for the brilliantly intellectual Elizabethan period in English history, when booze flowed freely, and England produced her most interesting men and women. When the neighbouring Scots adopted the use of whisky in the eighteenth century there followed almost at once the rise of the Caledonian peasantry.

Alcohol and literary creativity often go hand in hand. In the dawn of Chinese civilization, the poet Li Tai Peh sang her sweetest songs and drank freely of soy bean wine. During the sixth century before Christ some of the most delightful poetry was written by Anacreon, who derived most of his inspiration from alcohol, and in appreciation some of his best odes were dedicated to it.

Aeschylus, the greatest of Greek dramatists, wrote his immortal tragedies when liberally supplied with alcohol. Similarly, Eupolis and Cratinus would not lift a pen unless they had had several goblets of wine. Homer drank and praised alcohol because of the "spirit it brought to dare things high and set up an end to my thoughts."

The Latin poet Horace said that the elder Cato attained his greatest eloquence when he was thoroughly warmed by wine. Catullus certainly drank wine freely, and Ovid and Seneca did not conceal their great love for alcohol.

The immortal poet and tent maker, Omar Khayyam, author of "The Rubiyat," did not hesitate to confess his love for wine. When asked what his King might do for him, he replied: "Place me where wine in abundance may inspire my muse." He was accordingly pensioned and sent to Nishapur, where he found wine in great abundance.

Another poet, Chaucer, loved wine not one whit less. His greatest work was done while under its influence, and he did so well that the King granted him a daily pitcher of wine to maintain his excellence. This he did to such perfection that the King granted him a tun of wine in 1398.

Robert Herrick's poetry took flight in wings of alcohol. Ben Jonson, the first of the Poet Laureates of England, enjoyed his canary wine so well and with such excellent results that the King made a tun of canary wine the yearly gift to his Laureate. The Laureates who followed Jonson—Davenport, Dryden, Sgadwell, Tate, Rower, Eusden, Whitehead and Wharton—enjoyed the kingly gift and derived their poetic inspiration from it. To this day the tun of canary wine goes with the Poet Laureateship of England to ensure literary excellence.

The greatest of all Elizabethans, William Shakespeare, not only admired alcohol, but gave it a place of prominence in his immortal dramas. Some of his greatest creations were habitual drinkers: Falstaff, Caliban, Sir Toby Belch. And, as an after thought, Beaumont, Fletcher and Hogarth, in addition to other Elizabethans, were men of great creative ability as well as consumers of alcohol.

The greatest of all Spanish writers, Cervantes, admitted without blushing: "I can no more give up drinking for pleasure than if I had been born for nothing else." His greatest masterpiece, "Don Quixote," was written when thoroughly inspired by alcohol.

The polished English essayist, Addison, kept a bottle of wine at each end of the long gallery at Holland House. Here he was in the habit of walking back and forth while writing his essays. Every once in a while he would pause and take a drink to aid his thoughts in forming. This he would continue to do till he attained the proper degree of exhileration, when he would set his thoughts down in paper. His neighbor, Alexander Pope, drank with him as well as with Dryden, Swift and Steele. They were indeed a most merry and excellent company of men whose best work seemed to have been accomplished when their blood had been thoroughly warmed by alcohol.

Another of the immortals in English letters, John Gay, who by writing "The Beggar's Opera," invented comic opera, discovered at the age of 22, that wine had the fascinating quality of aiding his poetic composition. He was not long in discovering that under the influence of alcohol he was able to produce his best work. When he ceased to drink his literary productions also waned. This he soon realized, for in 1730 he wrote to Swift: "I continue to drink nothing but water, so that you cannot require any poetry of me."

This was also true of Swinburne, for when he finally ceased to take alcoholic drinks his productive powers failed him. Oscar Wilde ascribed his brilliance to alcoholic beverages, as did Goldsmith, Smollet drank like a fish, and insisted that his friends do likewise. His contemporary, Fielding, had the most unhealthy and unhappy habit of chewing tobacco while he drank champagne. Yet this did not seem to have any ill effects on him.

Burns wrote poetry "by the lee side of a bowl of punch, which had set every mortak in the company except the hautboy and the Muse." Richard Sheridan could not put pen to paper unless his spirits had been loosened by wine. He would not attempt to make a speech unless he swallowed a tumbler of raw whisky. Lamb was constantly under the influence of alcohol. He seemed particularly fond of gin and water.

Moore, the Irish poet, drank alcohol consistently and loudly sang its praises in his poetry, Hazlitt, the brilliant English essayist, became dull like Swinburne had when he gave up alcohol. Byron drank and wrote at the same time. His masterpiece, "Don Juan," was composed while Byron was under the influence of gin. Thompson said that he was "dull until excited by wine."

One of the greatest of all American writers, Edgar Allan Poe, was addicted to alcohol and was notorious during his lifetime for this failing. Yet his greatest creations came into being when he was inebriated. Walt Whitman tells us that he turned out his poetry "with the help of a bottle of port or what not." During the early years when he did not drink his literary productions were rather mediocre. But after he had become acquainted with alcohol his work improved decidedly."

Within more recent years Jack London confessed that he could not work well without alcohol. "I took my drink, at once my brain loosened up and began to roll off the words." The novelist, Harold McGrath, stated quite frankly that he doubted if any teetotaller had ever written a great book, painted a great picture, or composed a masterpiece in music.

Many of those addicted to the use of drugs claimed that they could work best when thus artificially stimulated. Emerson knew that quite a few literary men were in the habit of seeking inspiration in drugs. It was his considered opinion that drugs actually gave no inspiration. It was not the inspiration, he insisted but "some counterfeit excitement and fury."

To a lesser extent certain men of genius have been addicted to the use of drugs, notably opium and its derivatives. Among those who were known to have been addicted to some form of drug-taking were Coleridge, De Quincy, James Thomson, Swinburne, Rossetti and James Thompson.

Some of the works of these men show evidence of drugged inspiration. Coleridge's "Kubla Khan," as well as his "Christabel," are works written by a mind exhilerated by drugs. Edgar Allan Poe's "The Fall of the House of Usher" is another literary masterpiece which gives unmistakable evidence of drug inspiration. Similarly, "The City of Dreadful Night" was composed by James Thompson while his senses were sharpened by artificial stimulation.

The question may be asked if these men did their best work inspite of their ailments or addictions rather than because of them. Then again, the occurrence of both may have been coincidental. Or still again, perhaps they might have done better work if they had been free of disease or addiction. These offer further grounds for speculation.

A PEEP INTO EXISTENTIALISM

SUDHIR RANJAN DASGUPTA, M A. PH.D.
Principal, Bankim Chandra College, Naihati.

Wise men say that there is nothing causeless. Existentialism as a theory, therefore, must have its birth somewhere and somehow under the exigencies of certain circumstances that made its appearance possible, nay, necessary. In the later part of the 19th century when it came, in a recognisable form, into existence, political settings, philosophical Isms and ecclesiastical dispensations—all pointed to a type of world-order where collectivism got the better of individualism. Bolshevism and Fascism apart, where individuals are all but fodders for the state to consume, the much-vaunted Democracy, in its ultimate analysis, does not fare much better in its attitude towards the individuals. The state is an organism of which persons are all limbs. Self-sufficiency, if not self-identity totally, is denied. In idealism a human being is relegated to the position of an unreal appearance. So is he at the hands of materialist, who reduces him to a product of the natural forces. Dust he is and to dust he returns at the end. The entire drama of life is determined by the grim and blind laws of nature. Man has no freedom. In religion there is a call for the sacrifice of the one for the many, love for others in preference to the love for the self, for in universality alone rests the spirit of God. Nowhere therefore does man get his due recognition.

It was in a situation like this that existentialism came as a revolt against the prevalent thoughts for the vindication of the freedom of man and his glory. The central pivot round which the lives of men move is not the society nor the state nor any universal Idea or God. It is the existence of man as an individual, his growth irrespective of the considerations of what it means to all around him. Epistemologically therefore, taken of course in a general sense, existentialism is introspective, ontologically sceptic and theologically atheistic. As of comparatively recent origin, it has not yet crystalised into well-knitted philosophical thought. It awaits further expansion and systematisation. Excepting ego-centric bias, existentialists, as a class, differ in details one from the other. The result is that the formulation of a complete or finished piece of thought out of the writings of the existentialists is well nigh an impossible task. The general trend throughout is one of pessimism and despair. Too much of interest in the subject reduces the objective counterpart into a void. Hegelian conception of the Idea, passing through the unconscious objective world to self-consciousness in man, is denied. Man is relationless—each to each alone. He has none beside him to count upon. He knows not wherefrom he has come and whereto he is going. There is an uncertainty all round. Such an atmosphere of insecurity and estrangement naturally brings in its wake a sense of fear, dread (Soree), a sort of helplessness. It is at this psychological stage that the believers in God take to religious quest after Him and materialists to hedonism. Existentialists, like the religionists and idealists took to the method of introspection as against extrospection, adopted by the materialists and the scientists. But they cried halt half-way at the phenomenal level of the self. For the sake of self-sufficiency and freedom of the ego, some of them deny and decry the existence of God and with Him the noumenality of the self which, if noumenal, is above temporality. Time is a postulate with these thinkers. For Heidegger, all existence is permeated through and through with temporality which means a flux. With the Buddhists, he seems to believe in becoming as opposed to being. All existence is essentially a continuity, a change. It comes out of a mysterious nothingness to end equally in another obscure nothingness called death. However temporal in nature, the self of man, in itself not a spark of the Absolute nor a by-product of matter, is essentially a free agent with an attribute of self-consciousness. As such he is at liberty to use or misuse his freedom. The possibility of misuse makes him conscious of sin or guilt wherefore and wherefrom his moral life begins. And he gets what we call conscience. It tells him that he is not a finished product but is always in the act of becoming what he can possibly become but what, for the present, he is actually not. It stirs up an urge for the fulfilment of future possibilities, based on the avoidance of sin and adoption of the right course of conduct finally leading to the all-engulfing darkness of death and that speaks for the moral life of man. Death is not a sheer void. It is a positive possibility, rather the highest possibility of all possibilities that confront human existence. Although thrown to the background verging on denial, Religiocity is not a wholesale anathema with all existentialists. Kierkeguard was primarily a theologian. Minus Hegelian conception of the identity of God and man or, at any rate, dependence of the latter of the former, and with the proviso that man is after all a unique creature, very lonely and all to himself, he believes in God as a pure subjectivity. Is this subjectivity the biggest subjectivity side by side with the smaller subjectivities as in men or is the infinite subjectivity the vortex wherein all existences vanish poses a question which, as an existentialist he can possibly give no answer to. At any rate, he wants to posit a God, although with no considerable logic behind. Heidegger's differentiation between essence and existence or eternity and time, however cryptically dealt with is a positive pointer to the fact of transcendence that is immune from the ravages of time. Advocacy for human existence coming prior to essence, contrary to what obtains in the objective counterpart of animation or inanimation, is an indication of how he oscilates between a call from the noumenal and an attraction for the phenomenal. Sentiments for God with rational justifications become more articulate and expressive in the writings of G. Marcel. Faith is a unique source of knowledge in man. But for it, knowledge of objects outside him or even of his fellow beings is not possible. The highest kind of faith leads to the knowledge of the highest reality called God. Intellect, by nature analytical, can give no clue to His existence. Intuition and contemplation based on faith alone can bring a man face to face with his God, lead him to the realisation of his being as against having. Having always means possession of burdens which he must shake off before getting back to his original or unalloyed being or self. In death being, free from having, enters into life eternal. Marcel's philosophy regarding God and His relation to man is an instance of perceptible deviation from the general trend of existentialistic thoughts which, in essence, is atheistic in leanings.

Religion or no religion, existentialists imperceptively pointed to the direction of the quintessence of all faiths. 'Atmanam Biddhi' or 'know thyself' is one of the cardinal maxims for all lives divine to follow. But the philosophy of life that they support, led them astray. If only they could go a little deeper into their introspective query after the self, they could have realised that, in the end, pessimism of despair yields place to the optimism of hope, uncertainty to certainty, dread to courage and self confidence and lastly death to life eternal. Existentialism is still in its pre-adolescent state. It has a future ahead. Let us wait and see what final shape it takes on.

STRUGGLE OF VERNACULARS FOR THEIR RIGHTFUL PLACE IN OUR UNIVERSITIES

S. K. De, M.A.

The struggle of the Indian languages for a proper place in Universities is as interesting and stirring as the history of the struggle for independence of the country. It was after a long and strenuous fighting of about three quarters of a century that Indian languages were considered fit to be studied in Universities. Every time the question was raised, the authorities created all sorts of difficulties and inconveniences and the proposal had to be dropped at last. Not only Englishmen but a considerable number of educated Indians failed to understand the unnaturalness of imparting education through a language that was not the mother-tongue of the child. A short history of the battle royal that was fought in this connection is given here.

Between 1857 and 1902 five Universities in India—Calcutta, Madras, Bombay, Allahabad and Lahore were established. The long and violent controversies that broke out on the subject of the medium of instruction between the Orientalists and Anglicists have now ceased for ever. The older officials of the Company in Bengal, in those days, believed that the policies of Duncan, Warren Hastings, Minto, Prinsep, H. H. Wilson and other Orientalists were the final word on educational statesmanship, and they advocated the encouragement of Sanskrit and Arabic studies and suggested that Western science and knowledge should be disseminated through the medium of these languages. Out of ten members of the Committee five supported the policy of giving encouragement to Oriental literature. Later on, Raja Radhakanto Deb Bahadur of Shovabazar was chosen head of this school of thought.

Mr. H. T. Prinsep went so far as to state :—

"It is declared by those who take the opposite view to Mr. Macaulay that it (*i.e.*, the prejudice against European knowledge) does exist and that the prejudice is so general, especially amongst the Moosalmans that there is no hope of our being able by the mere offer of instruction in English and English science, to secure that it shall be received for its own sake. These persons say that the best chance of procuring that true knowledge shall ultimately prevail, is to engraft it upon the course of education now most esteemed, and to take every means of leading the youth to the improved condition in which it is desired to place them by giving them first all they respect and admire in their fathers, and then besides the further instruction we have to impart." (Selections from Educational Records, Vol. I).

The second school of thought known as Anglicists had no definite leader. It consisted mostly of the younger servants of the Company like Colonel Jervis who looked forward to the support of Macaulay who was then the President of the General Committee of Public Instruction and the Law Member of the Executive Council of the Governor-General. This school believed in the wisdom of Grant's advice and insisted on spreading Western thoughts through the medium of English. Later on when Raja Rammohan Roy joined them, their voice became prominent. In his letter, dated the 11th December, 1823 to Lord Amherst, Raja Rammohan Roy wrote—

"The Sanskrit system of education would be the best calculated to keep the country in darkness. We want a more liberal and enlightened system of instruction, embracing mathematics, natural philosophy, chemistry, anatomy with other useful sciences."

However, these were the two main schools of thought that fought violently in Bengal. There were two other schools of thought in other parts of India ; for example, there were men like Monstuart Elphinstone, the then Governor of Bombay who believed in the efficacy of spreading Western thoughts through the medium of the modern Indian languages. They argued that this was the only means by which European knowledge could reach the mass.

In the Presidency of Madras, Munro made an inquiry in 1822 regarding indigenous education. In his Minutes dated the 10th March, 1826, Munro proposed that an attempt should be made to educate the mass by improving the indigenous schools. For this purpose, he said better type of teachers should be procured, and so he proposed the establishment of two schools (One for the Hindus and the other for the Moslems) in each collectorate and of one school in each Tashil of the Province. Munro's proposal was sanctioned by the Court of Directors in 1828 ; but unfortunately, Munro died in 1827, and his successors had neither the sympathy nor the vision of Munro, so the experiment was tried in a haphazard way.

In the North Western Province Mr. Thomson tried to build a system of mass education by founding several indigenous schools.

All these different educational experiments, *viz.*, spreading Western thoughts and ideas through (1) Oriental languages like Sanskrit, Arabic and Persian, (II) through the medium of Indian languages, (III) through the medium of English, and (IV) by improving upon the indigenous schools went on simultaneously in India for some time on trial and error method.

The Bombay Board of Education condemned the indigenous schools where education was imparted in old traditional method without any care for the new environment that was going to be created by the arrival of a foreign power, and tried to build up a network of official schools where higher education was sought to be imparted through the medium of the mother-tongue of the students; whereas Bengal neglected Indian languages and adopted English as the medium of instruction. It was thought that this system was successful, and this we can understand from the following few lines from Wood's Despatch regarding education in Bengal.

"In Bengal, education through the medium of the English language has arrived at a higher point than in any other part of India. We are glad to receive constant evidence of an increasing demand for such an education, and of the readiness of the natives of different districts to exert themselves for the sake of obtaining it. There are now five Government Anglo-Vernacular colleges, and Zillah schools have been established in nearly every district."

But this attempt for spreading education through the medium of English among the masses was not successful that, too, can be inferred from a few lines of the same Despatch.

"Very little has, however, been hitherto done in Bengal for the education of the mass of the people, specially for their instruction through the medium of the vernacular languages. A few vernacular schools were founded by Government in 1844, and upon their transfer, in April, 1852, from the charge of the Board of Revenue to that of the Council of Education, it appeared that they were in languishing state and had not fulfilled the expectations formed on their establishment."

The Bombay Native Education Society was established in Bombay with the object of spreading modern education among the people. This society received grant-in-aid on the recommendation of Elphinstone, and they established some District Primary Schools in the mofussil. These schools were primary in name, actually they were as good as secondary schools. The spread of Western Science and knowledge through the mother-tongue was the object of these schools and as such the syllabus of these primary schools included the study of Reading, Writing, Arithmetic, History of England and India, Geography, Astronomy, Natural Philosophy, Algebra, Euclidian Geometry and Trignometry. The number of classes in these schools varied from 6 to 10 and the medium of instruction was the mother-tongue.

The Bombay Native Education Society was of opinion that the study of English was of "Secondary importance" in effecting the mental and moral improvement of the Indian people. In its report for 1825-26 it stated as follows :—

"These ideas (*i.e.*, the new ideas in Western literature and science) will be most easily rendered comprehensible to them by means of the mother-tongue of each scholar. It will, therefore, no doubt be admitted that the time and labour both of the master and the scholar would be materially saved, were these indispensable explanations previously embodied in works written in the native languages ; and thus it again appears that English can never become the most facile and successful medium of communicating to the natives, as a body, the literature, science and morality of Europe."

Bombay Government gave simultaneous encouragement to the study of Sanskrit, English, and Modern Indian languages. The following few lines from a report of Captain Candy will explain the principles underlying the policy of Government.

"It seems to me that too much encouragement cannot be given to the study of English, nor too much value put upon it, in its proper place and connection, in a plan for the intellectual and moral improvement of India. This place I conceive to be that of supplying ideas and the matter of instruction not that of being the medium of instruction. The medium through which the mass of the population must be instructed, I humbly conceive, must be their Vernacular Tongues, and neither English nor Sanskrit. Sanskrit I conceive to be the grand storehouse from which strength and beauty may be drawn for the Vernacular languages, and it is, therefore, highly deserving of cultivation, but it cannot furnish from its stores the matter of instruction, nor can it ever be the medium of instruction to more than a few. In a word, knowledge must be drawn from the stores of the English language ; the Vernaculars must be employed as the media of communicating it, and Sanskrit must be largely used to improve the vernaculars and make them suitable for the purpose. I look upon every Native who possesses a good knowledge of his own mother-tongue, of Sanskrit, and of English to possess the power of rendering incalculable benefit to his countrymen."

A controversy regarding the medium of instruction arose in Bombay also between 1845 and 1848. But here the nature of controversy was entirely different from that of Bengal. In Bengal, as has been already stated, the controversy was between the classical languages on the one hand and English on the other ; but here the conflict was between classical and modern Indian languages. The people of Bombay were not ready like the people of Bengal to accept Macaulay's theory that it would not be possible to translate any valuable work on Western science in the dialects spoken by the people of India. Which contain neither literary nor scientific information, and are moreover, "very poor and rude." His remarks in this connection were :—"All parties seem to be agreed on one point, that the dialects commonly spoken among the natives of this part of India contain neither literary nor scientific information, and are moreover so poor and rude that, until they are enriched from some other quarter, it will not be easy to translate any valuable work into them. It seems to be admitted on all sides, that the intellectual improvement of these classes of the people who have the means of pursuing higher studies can at present be effected only by means of some language not vernacular amongst them."

Nor did the people of Bombay accept his exaggerated idea of the richness, utility or importance of English which Macaulay elaborated so laboriously to persuade the people to accept English as the medium of instruction :

"The claims of our own language it is hardly necessary to recapitulate. It stands preeminent even among the languages of the West. It abounds with works of imagination not inferior to the noblest which Greece has bequeathed to us,—the models of every species of eloquence,—with historical compositions which, considered merely as narratives, have seldom been surpassed, and which, considered as vehicles of ethical and political instruction, have never been equalled, —with just and lively representations of human life and human nature, —with the most profound speculations on metaphysics, morals, government, jurisprudence, trade,—with full and correct information respecting every experimental science which tends to preserve the health, to increase the comfort, or to expand the intellect of man. Whoever knows that language has ready access to all the vast intellectual wealth which all the wisest nations of the earth have created and hoarded in the course of ninety generations. It may safely be said that the literature now extant in that language is of greater value than all the literature which three hundred years ago was extant in all the languages of the world together."

They urged upon the Government to spread western education through the medium of mother-tongue. It is surprising that the champions of neither party in Bengal could realise the importance of mother-tongue or say anything in favour of Bengali. The controversy (Anglicists vs. Orientalists) was set at rest for the time being by the resolution of Bentinck's Government on the 7th March, 1835 which runs as follows :—

"His Lordship in Council is of opinion that the great object of the British Government ought to be the promotion of European literature and science among the natives of India ; and that all funds appropriated for the purpose of education would be employed on English education alone."

By 1839, much of the heat of the controversy cooled down as Macaulay had left India. The classicists by this time could understand that they were fighting a lone fight and that it would not be possible for them to resist the spread of English. So now they moderated their demand and were ready to accept a compromise by suggesting that Government should leave to the option of the student to choose whichever education he liked, classical or English.

For about five years from 1835 to 1839 the controversy lingered on in a very mild form in Bengal and was finally closed in a minute, dated the 24th November, 1839 by Lord Auckland, the then Governor-General of India with the following observations :—

"The inference to which I would point from the facts and observations is that a principle of wise liberality, not stinting any object which can reasonably be recommended but granting a measured and discriminating encouragement to all, is likely to command general acquiescence, and to obliterate, it may be hoped, the recollection of the acrimony which has been so prejudicial to the public weal in the course of past proceedings."

So English became the medium of instruction in Bengal. The pressure from Bengal as well as the indirect pressure that came from the adoption of English as the language of courts and administration finally decided the fate of the controversy even in Bombay, and there, too, English became the medium of instruction in all schools but the lower ones.

Both the parties (Classicists and Anglicists) were wrong. The correct solution of the probiem would have been to adopt Indian languages as the medium of instruction. Had it been accepted at that time Indian languages would have been greatly enriched by this time.

The medium of instruction being settled for ever, people could realise that the question would not reopen in the near future. Still they cherished the hope in their heart of hearts that Indian languages would find their proper place in the whole system of education from Secondary to the University stage ; but that hope was nipped in the bud. Now we shall dilate upon how it was done.

Woods' Education Despatch of 1854 directed that universities should be established at Calcutta, Bombay, and Madras and all the Universities were to be modelled on the London University which was then an examining body. Its other instructions regarding other duties of the universities should be carefully studied. The Despatch says :—

" It (university) would generally encourage the cultivation of the vernacular languages of India that professorships should be founded for these languages and perhaps also for Sanskrit, Arabic, and Persian. The grammars of these languages, and their application to the improvement of the spoken languages of the country, are the points to which attention of these professors should be mainly directed."

Naturally the people expected that the spirit and letter of the great Despatch should be followed, and that Universities should establish professorships of modern Indian languages and should give such encouragement to the languages of the masses that ultimately these languages could be adopted as media of instruction at all stages at a very early date. But it was not so. This part of the direction of the Despatch was totally neglected and the languages spoken and understood by the masses continued to languish as all the newly established universities were purely examining bodies and had no powers to appoint professors to do teaching work on their behalf. But we think it would not have been illegal for them to institute examinations in modern Indian languages so that they might be taught, at least, in affiliated colleges. This step was taken in the beginning but was abandoned very soon in all the universities except in Madras, and modern Indian languages were totally excluded from university course or were allowed to occupy only a very subordinate place.

A short analysis of the Report of the Indian Universities Commission, 1902 will reveal the following facts :—

(*a*) At the Entrance Examination, one of the four compulsory subjects was Second Language which was defined as (*i*) an Oriental or European classical language, or (*ii*) an Indian or Continental European vernacular language. In Allahabad and Punjab Universities, the option of a vernacular language was not given and in the Punjab a candidate could take a fifth optional subject which might be a vernacular language, elementary science, or a second classical language.

(*b*) At the Intermediate Examination a second language defined as "an eastern or western classical or modern European Language" was compulsory. Madras University alone added the option of a modern Indian language.

(*c*) At the B A. Examination, Madras was the only university where modern Indian languages were included as an option to a classical longuage.

From this short analysis it would be seen that, except in Madras the study of modern Indian languages was neglected in the ordinary course of the university, and the Punjab University conducted some special examinations in modern Indian languages.

According to the first regulations of the Bombay University, a modern Indian language could be taken up as a subject from the Matriculation to the B.A. Examination. In 1862, however, Sir Alexander Grant, the then Director of Public Instruction, moved in the Senate that all modern Indian languages should be removed from all university examinations except the Matriculation (where also their study was optional and not compulsory) as suitable text books in modern Indian languages were not available, as it was not worthwhile to study the old Indian poets for university examination, and as it was not the duty of the university to develop modern Indian languages. The last reason was the strangest of all; still Sir A. Grant's proposal was accepted by the university, and modern Indian languages were banished from all university examinations except the Matriculation Examination where they were allowed to remain as an optional subject.

As the study of modern Indian languages was only optional at the Matriculation, schoools neglected them even in Standards IV to VII and some went so far as to omit them even in Standard I. Several attempts were again made to reintroduce the study of the modern Indian languages at the university stage. Sir J. B. Peile, the Director of Public Instruction made such an attempt in 1870. In 1887 public opinion was mobilised in favour of institution of Indian languages and institutions like the Poona Sarvajanik Sabha, the Gujrat Vernacular Society, the Kanarese Association, the Anjuman-i-Aap-Baab etc. made tremendous agitation which gathered strength every year as a rolling snow ball. In 1892, the Secretary of State for India also suggested that the University should take up the matter once again for reconsideration. But every time the reinstitution of the modern Indian languages in the University was stoutly opposed. Finally, Justice M. G. Ranade, a great nationalist leader of India was successful in introducing modern Indian languages at the M.A. Examination only in 1901. The credit of the first introduction of modern Indian languages at the M.A. Examination must go to Bombay. The same tale of woe regarding modern Indian languages was repeated in the case of other universities, too. They got recognition nowhere. It was only after streneous fighting and relentless agitation of several years that Indian languages got honoured position in Indian Universities. We shall come to this history later on. Secondary education expanded considerably in India in the period between 1854 and 1882 but some serious defects were marked even at this stage, the most important of which was the neglect of the mother-tongue as a medium of instruction. Throughout this period this defect remained though several attempts were made to remove it. The Despatch of 1854 had visualised the secondary schools teaching through the medium of mother-tongue, in addition to those, that taught through the medium of English. Let us quote here a few lines from the Despatch:

"We include these Anglo-Vernacular and Vernacular schools in the same class, because we are unwilling to maintain the broad line of separation which at present exists between schools in which the media for imparting instruction differ. The knowledge conveyed is no doubt, at the present time, much higher in the Anglo-Vernacular than in the Vernacular schools ; but the difference will become less marked, and the latter more efficient, as the gradual enrichment of the vernacular languages in works of education allows their schemes of study to be enlarged, and as a more numerous class of school masters is raised up, able to impart a superior education."

But unfortunately the policy of the Education Department at this time was against the cultivation of modern languages of India ; and so instead of trying to bridge over the gulf of difference that existed between Vernacular and Anglo-Vernacular institutions, the

Department introduced reforms which widened the gulf. The reforms that were introduced at this stage will show that:—

(*a*) "the study of English as a language was begun (except in Bombay) when the pupil was not properly grounded in his own mother-tongue.

(*b*) English was taught as a subject (except in most high schools of Bengal before it was used as a medium of instruction). But the period of its study as a subject was too short to give the pupil a mastery over the language which is essential for its successful use as a medium of instruction.

(*c*) In the high school stage, English was invariably used as a medium of instruction.

(*d*) Except in the Punjab, the highest education that could be obtained through the mother-tongue was limited to the middle stage, and the idea of high schools teaching through the mother-tongue seemed to have been given up.

"In short, the more important object of the secondary course of 1882 was to spread a knowledge of English and not to spread European Knowledge of a less high order through English as well as through the mother-tongue as laid down in the Despatch of 1854."

Naturally the question of modern Indian languages again came before the Indian Education Commission for consideration; but unfortunately the recommendations of the Commission was extremely disappointing. It favoured the use of English as medium of instruction at the high school stage.

Mainly for this unsympathetic attitude of the Education Commission, the problem of adopting modern Indian languages as media of instruction remained unsolved for a long period between 1882 and 1902. The idea of adopting mother-tongue as medium of instruction in high schools was definitely abandoned in 1902, and in the same year the Indian Education Commission recommended the teaching of English as the "Prime object" of the secondary course, and the highest education which a child could obtain through mother-tongue was limited to the middle school stage only in all the provinces of British India. Modern Indian languages were consequently neglected everywhere and unusual stress was given on English. To cope with this unnatural situation English began to be studied even before the child had obtained a good knowledge of his mother-tongue.

This artificial situation continued till the arrival of Lord Curzon as Governor-General and Viceroy of India who inspite of his anti-Indian feeling and imperialistic mentality gave a definite and progressive ruling on the question of adopting modern Indian languages as the media of instruction at the middle school stage. Government Resolution on Educational policy passed in 1904 observed:—

"It is true that the commercial value which a knowledge of English commands, and the fact that the final examinations of the high schools are conducted in English, cause the secondary schools to be subjected to a certain pressure to introduce permanently both the teaching of English as a language and its use as the medium of instruction; while for the same reasons the study of the vernacular in these schools is liable to be thurst into the background. The tendency requires to be corrected in the interest of sound education. As a general rule a child should not be allowed to learn English as a language until he has made some progress in the primary stages of instruction and has received a thorough grounding in his mother-tongue.

"It is equally important that when the teaching of English has begun it should not be permanently employed as the medium of instruction in other subjects. Much of the practice, too, prevalent in Indian schools, of committing to memory ill-understood phrases and extracts from text-books or notes, may be traced to the scholars' having received instruction through the medium of English before their knowledge of the language was sufficient to enable them to understand what they were taught. The line of division between the use of the vernacular and of English as medium of instruction should, broadly speaking, be drawn at a minimum age of 13. No scholar in a secondary school should, even then, be allowed to abandon the study of his vernacular, which should be kept up until the end of the school course. If the educated class neglect the cultivation of their languages, these will assuredly sink to the level of mere colloquial dialects possessing no literature worthy of the name, and no progress will be possible in giving effect to the principle, affirmed in the Despatch of 1854, that European knowledge should gradually be brought, by means of Indian vernaculars, within the reach of all classes of the people."

The recommendations of Lord Curzon broke the stubbornness of many; still no adequate action was taken. Long after this by 1921-22 modern Indian languages came to be used as media of instruction at the middle school stage (we will come to this point very soon). But the question of giving up English as medium of instruction in favour of the mother-tongue at the high school stage was again left undecided.

A resolution for making Indian languages as the media of instruction was moved in the Imperial Legislative Council on the 17th March. 1915, but the resolution was opposed on grounds which we now, even today, put forth for displacing English. Some of the grounds given below for the perusal of readers :—

(1) The pupil's knowledge of English would deteriorate if English is not used as a medium of instruction.

(2) Suitable text-books in modern Indian languages were not available.

(3) The Modern Indian Languages being deficient in technical nomenclature, it would be difficult to impart instruction through them in such subjects as geography, mathematics and science.

(4) Teachers were not available to teach non-language subjects in modern Indian languages.

(5) There being several languages current in each province, it would be extremely difficult, if not impracticable, to make provision for imparting instruction through the medium of Modern Indian Languages, and the attempts would involve very large expenditure.

(6) As English is a language of inter provincial importance, the proposed measure would interfere with the unification of the Indian people.

As the Imperial Legislative Council failed to do justice to Indian languages, a representative conference was held at Simla in 1917 under the chairmanship of Sir C. Shankaran Nair who was then the Member-in-charge of Education. The Conference again could not come to any definite conclusion, and English continued to be the medium of instruction.

Indian languages continued to be neglected in Indian Universities throughout the Victorian Era. Madras was the only University which allowed a modern Indian language as an alternative to a classical language at all examinations; Punjab University tried to adopt modern Indian languages as media of instruction at the University stage, Bombay did not allow a modern Indian language at any examination except the Entrance (where it was optional) and the M.A. (since 1901 only). Inspite of this unhelpful attitude of the Indian University Commission, the position of the modern Indian languages in University courses began to improve after the Indian University Act of 1904. The Quinquennial Review of the Progress of Education in India, 1902-07 says :—

"Previously vernacular languages found no place in University courses except in Madras where they were alternative to a classical language. Now there are two Universities, *viz.*, Calcutta and Madras, which have made the vernacular language a compulsory subject of study for the Intermediate Examination, and one University, Calcutta, which requires an exercise in the vernacular from all candidates for the B.A. degree ; while Madras, though not requiring a vernacular to be studied for the B.A. permits the vernacular history and literature to be chosen from among the various alternatives. In other Universities the vernaculars find no place either as optional or compulsory subjects of study."

The observations of the Calcutta University Commission in this respect are very interesting :—

"It is a matter of surprise that notwithstanding the generous policy boldly outlined by the Court of Directors, the claims of the vernaculars have not been adequately recognised. Indeed in the University of Calcutta, where successful attempts have been made only in recent years to encourage the study of vernaculars, their claims have received what cannot but be deemed reluctant recognition. The regulations for the Matriculation Examination require that every candidate be tested in composition in his vernacular. The duty is laid on the Syndicate to prescribe, on recommendation of the Board of Studies, a small number of standard works, not exceeding six, to be read as models of style ; but this is coupled with the provision that candidates shall not be asked to answer any questions on the subject-matter of the books recommended or on history of vernacular literature. Similar provisions are to be found in the regulations for the B.A. Examination where the object of the paper on vernacular is described as 'a test of composition and of general knowledge of the subject-matter of the books recommended'......... Surely it is not a matter for wonder that under these conditions the study of vernacular is generally neglected by students as well in schools as in colleges. No young man in England would be considered to have received a sound and good education unless he possessed a mastery over his own vernacular, had learnt to avoid grammatical errors and had acquired a taste for the niceties of idioms of his mother-tongue. Again, an English student in a foreign University, can easily take notes, in his own language, of the lectures delivered, say in French or German. We believe a considerable proportion of Indian students would find a similar attempt to take notes, in their vernacular, of lectures delivered in English, not a pleasant exercise, but a tedious and repulsive trial. We are emphatically of opinion that there is something unsound in a system of education which leaves a young man, at the conclusion of his course, unable to speak or write his own mother-tongue fluently and correctly. It is thus beyond controversy that a systematic effort must henceforth be made to promote the serious study of the vernaculars in secondary schools, Intermediate colleges and in the University. The elaborate scheme recently adopted by the University for the critical, historical and comparative study of the Indian vernaculars for the M.A. examination is but the coping stone of an edifice of which the base has yet to be placed on a sound foundation, and it is only when such a structure has been completed that Bengal will have a literature worthy of the greatness and civilisation of the people."

But no action on these recommendations was taken ; so the study of the modern Indian languages was not sufficiently emphasized in our Universities even in 1921-22 and this negligence greatly affected the development of these languages and their adoption as media of instruction.

On the 26th December, 1913 a special Convocation was arranged at Government House to confer the Honorary degree of Doctor of Literature on Rabindranath as a fitting recognition of the domain of one of the greatest Indian vernaculars. Addressing Lord Hardinge who was Chancellor of the University of Calcutta at this time, Sir Asutosh Mukherjee said :—

"Apart, however, from the preeminence of Mr. Tagore as a poet, we must not overlook the true significance of the world-wide recognition now accorded for the first time to the writings of an author who has embodied the best product of his genius in an Indian vernacular ; this recognition, indeed, has been immediately preceded by a remarkable revolution in what used to be not long ago the current estimate, in academic circles, of the true position of the vernaculars as a subject of study by the students of our University. It is now nearly twenty-three years ago a young and inexperienced member of the Senate earnestly pleaded a competent knowledge of the vernaculars should be a pre-requisite for admission to a Degree in the Faculty of Arts in this University. The Senators complemented the novice on the eloquence and admired his boldness, but doubted his wisdom, and by an overwhelming majority, rejected his proposal, on what now seems the truly astonishing ground that the Indian vernaculars did not deserve serious study by Indian students who had entered an Indian University. Fifteen years later, the young Senator, then grown maturer, repeated his efforts, with equally disastrous result. In the year following, he was however more fortunate and persuaded the government of Lord Minto to hold that every student in the University should, while still an under-graduate acquire a competent knowledge of his vernacular, and that his proficiency in this respect should be tested precisely in the same manner as in the case of any other branch of knowledge and should be treated as an essential factor of success in his academic career. After a struggle of a quarter of a century, the elementary truth was thus recognised that if (the Indian Universities are ever to be indisolubly assimilated with our national life, they must ungrudgingly accord due recognition to the irresistible claims of Indian vernaculars.) The far-reaching efforts of the doctrine thus formulated and accepted, has already begun to manifest itself, but time alone can prove conclusively the beneficent results of this vital and fundamental change. Meanwhile, the young Senator of twenty-three years ago has the privilege to ask your Excellency to confer the Honorary degree of Doctor of Literature and thus to set, as it were, the seal of academic recognition upon that preeminently gifted son of Bengal who has been a loyal and life long devotee of the most progressive of the Indian vernaculars."

Fortune smiled at last! From 1922 to 32 Universities were definitely in favour of making Indian languages as media of instruction. The following extract will show how the victory was won at last.

Central Provinces—In 1922-23, the use of modern Indian languages as media of instruction was made compulsory in Government High Schools and was left optional in the case of aided institutions Provisions had to be made for three languages, viz., Marathi, Hindi and Urdu. But it was not possible on financial grounds, to provide for all the languages. Government was often called upon to choose between sacrificing the language of the minority or the maintenance of a section where English would still continue to be the medium of instruction. Ultimately, therefore, the orders were modified to the effect that the medium of instruction in a Government High School would be 'the Indian language commonly spoken in the area in which the school is situated', but that Government would maintain a section teaching through English if one is demanded. By 1937, as many as 30 private high schools (out of a total of 54) had adopted Indian languages as the media of instruction, 16 used English, and 8 imparted instruction through both the media.

BIHAR AND ORISSA

The Bihar Education Committee of 1923 recommended that modern Indian languages should be used as media of instruction in the four highest classes. The regulations of the Patna University were, therefore, altered so as to permit the use of these languages as media of examination at the Matriculation Examination after the year 1928, in all the subjects except English and Mathematics. In 1925, Government decided that in those Government High Schools, where there were two divisions in the upper classes, the experiment of using the Indian languages as media of instruction should be tried in one division of each standard, English continuing to be the medium of instruction in the other. Privately managed high schools were also encouraged to adopt the modern Indian languages as media of instruction in the upper secondary classes.

MADRAS

In 1925, Government issued orders permitting the use of the modern Indian languages as the media of instruction and examination in all non-language subjects in the three highest forms of secondary schools. The movement spread rather slowly; but by 1937 fifty-one percent of the high schools had adopted the Indian languages as media of instruction.

BOMBAY

In 1926 revised regulations were framed for the School Leaving Certificate Examination which permitted the candidates to answer question papers in history and in classica Indian languages in any of the recognised Indian languages of the Province, *viz.*, Marathi, Gujrati, Kannada, Urdu and Sindhi. Later on, this concession was extended to the Matriculation and by 1937 candidates were permitted to answer question papers in history, geography and classical languages in any of the languages mentioned above. Nearly all secondary schools (with the exception of a few schools which had special reasons for retaining English) used the mother-tongue as the medium of instruction in the above subjects.

UNITED PROVINCES

During the period (1927-32), candidates for the high school examination were allowed to answer question papers either in English or in a modern Indian language according to their choice. Similarly, high schools were allowed to adopt these languages, with the special permission of the Director of Public Instruction, as the media of instruction in two highest classes of the secondary course.

PUNJAB

In the quinquennium 1927-32, candidates for the Matriculation were allowed to answer question papers in history and geography either in English or in a modern Indian language.

BENGAL

It was decided that modern Indian languages should be used as the media of instruction in all non-language subjects beginning with the year 1930, and it was reported in 1937 "the medium of instruction in high schools is nominally English but in practice, except in a few schools, instruction is usually given in a mixture of English and the mother-tongue of the pupils."

This short and interesting history of the struggle of the modern Indian languages for their rightful place in the secondary schools will show how slow was the progress and how it got stiff opposition not only from the side of the vested interest which did not like the spread of higher education in India but also from the educated Indians, to whom knowledge meant, knowledge of English language only and as such they feared if the People failed to speak and write English fluently and correctly, their knowledge and progress would suffer. The struggle of the Indian languages was as much bitter as the struggle for independence.

However, this innovation created not unexpectedly a great row among the conservatives and old-fashioned people who always think in terms of the bye-gone age and lament for the good old days—the days that are no more.

Of course, there were some practical difficulties too; for example in multi-lingual areas it was not possible on financial grounds, to give instruction through all the languages of the area, as such English was often adopted as a medium of instruction.

The difficulties which universities had to face in the earlier period (1921-37) for adopting modern Indian languages as media of instruction at the secondary stage completely disappeared in the period (1937-47). Quality text-books were published in good numbers, terminologies began to be evolved and adopted (though lacked in uniformity and universal acceptance) in all parts of India, teachers became gradually accustomed to teaching even non-language subjects like chemistry, physics, botany, algebra, geometry, biology etc. By 1947, the mother-tongue became the medium of instruction at the secondary stage in all the universities. In September, 1955 it was resolved that Bengali should be the medium of instruction in I.A., I.Sc., I.Com. courses of the Calcutta University. Now the only problem in this respect is to make the mother-tongue the medium of instruction at the Post-Graduate stage.

Before we conclude the paper we must pay glowing tributes to the Viswabharati and the Osmania University for the great part they played to make Bengali and Urdu media of instruction.

In Bengal, Viswabharati under the able guidance of Rabindranath made Bengali the medium of instruction for all stages of education and for this many original books in different branches of arts and science were written and compiled by Bengali scholars.

In Hydrabad, Sir Akbar Hydari did yeoman's service for making Urdu the medium of instruction in all stages of education—primary to the university and for this he got books of eminent authors in different branches of arts and science translated into Urdu.

Modern Indian languages remained neglected for more than three-quarters of a century. Had not they remained so neglected, they could have greatly flourished, and post-graduate studies might have been carried through their media long since.

ORIGIN OF LIFE

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In one of the Tagore poems in the *Śisu* (The Child), the child-hero asks the mother, "Where from you picked me up, mother, and how?" The mother, simultaneously weeping and smiling, replied thus, "You were in my mind, in the spring of my desire." The sage of the Upanisad was asked **"कस्माद् भूतानि जायन्ते"** *i.e.*, "wherefrom has world sprung up"; and the reply was **"अन्नाद् भूतानि जायन्ते"** *i.e.*, the world's origin is in the nutrition it takes from outside. My purpose is to show that both these above-mentioned questions represent the most common and living spirit of enquiry in the human mind with regard to the origin of life. The answers in both the cases suggest equally simplified facts, which are more enjoyable than reliable. In fact, most of our enquiries about the origin of life do not get either a proper answer or get an answer, if at all, in a distorted way. Unfortunately, the idea of origin of life is often foundt o be shrouded in a mystery of creation, or is interpreted as that of a 'vital force' because of the absence of proper knowledge or of a distorted attitude to the very question. The hypothesis of vital force instead of explaining life merely assumes its existence. The idea of a creator God, from the view point of a theologian, simply results in a romantic working of the mind which wants to avoid an intellectual responsibility. A mystic might reduce this living world to a phase of **लीला** (sport) on the part of a God in Heaven or think of an Eternal Dreamer lying in the ocean of 'Causes' and dreaming of thousands and thousands of Universe. Another class of clever thinkers would combine a mythical approach with the process of Evolution in a theory like Teleological evolution. None of these theories, however, can claim any real encouragement from science, because all of them lack objectivity.

DEPARTURE FROM TRADITION

On the other hand, we get a class of truth-seekers who proceed in a totally different way. Their discipline does not allow them to deviate from a strong sense of factual reality. Thus, without fabricating facts, they simply remain faithful to the facts and derive the theories from the very nature of those facts. To them Science means a knowledge of a thing within a set of given conditions. Knowledge is bound to be modified along with the changes of these facts. The 'facts' and the 'known facts' continue to change along with enormous possibilities. We have to remember this dynamic nature of facts while discussing the problem of origin of life about one-hundred years since the publication of the *Origin of the Species* (1859).

AMALGAMATION OF SCIENTIFIC STUDIES

Present day sciences are highly specialised studies about particular departments of nature. Each science starts with some given position, analyses the facts within that given set and establishes certain generalisations about those facts. It is both difficult for a particular science to go beyond the given world of facts in quest of its origin or to remain in its isolated world. Unless all the particular sciences would come closer, knit together in an interrelated and integrated manner, truth remains an impossible task to be achieved. Further, a science grows and develops as a system of facts would grow and develop in a continuous process of evolution.

BIOLOGICAL APPROACH

A system of knowledge which is built upon the facts, nature and laws of living phenomena is recognised as Biology. Biology is a special aspect of the problem of life which is linked up further with allied sciences like Physiology and Medical Science. Biology accepts life and its given conditions. Biology proper has got no answer, possibly, so far as the question about origin of life is concerned. The two hypotheses of Biogenesis, *i.e.*, life from previous life, and Abiogenesis, *i.e.*, life from something non-living phenomena, may be examined by us. The theory of Biogenesis is supported by Virchow's formula which states that the cell originates only from a cell or like originates from like matter. This statement cannot explain the presence of the phenomena of life in ancient earth of ours which remained once in a state of hot and gaseous mass. The theory of Abiogenesis is supported by various interesting implications like 'vital force,' or a 'missing link' and similar other ideas unacceptable from scientific point of view, at least in present times.

EVOLUTION IN GENERAL

The problem of life may be tackled in a much better way than by the rigid theories of Biogenesis and Abiogenesis if we stick to dynamic nature of things and continuity of those things to a more developed condition, to a newly emerged quality which remained absent earlier. We must recognise the fact that nature abhors vacuum. The so called matter remains always interrelated with other material properties ; and we cannot explain nature by means of 'chance factor.' Another gift we require is the superior quality of scientific imagination without which we cannot differentiate and synthesise the properties in the quick succession of continuity. With the help of these preliminary equipments as background, it becomes easy for a Biologist now to connect different forms of higher stages of life with relatively lower levels in the course of Evolution, till one reaches the first phase of living organism a 'protozoa' or 'amoeba.' Thus it becomes much easier a problem for him than before to connect the multicellular life with previously existing cellular one. And, in the similar way our Biologist now would stop and think a little and then connect the first evolution of living substance with much earlier stages of organic substances and that stage with still earlier stages of inorganic matter particles. The total process we have to trace out now with patience and care on our part.

INORGANIC STATE

Organic substances are distinctively different from inorganic substances (stone, glass, metal and other materials which do not burn when they are heated or not carbonised when air is shut out). There are many planets still in the way of making and allowing still the separately and rapidly moving minute particles of matter to remain free and scattered. This inorganic state of existence can be detected with the help of spectroscope adjusted with a certain degree of precision. This is a stage in which our earth too seems to have remained long, long ago for an indefinitely long time. Life did not exist then ;—in fact, no life could exist. But we must note that carbon particles existed both in separate and compound conditions throughout the different earlier stages preceding life.

HYDRO-CARBON COMPOUNDS

In the atmosphere of some of the red and hottest stars of extraordinary luminosity having a temperature 20,000—28,000 centigrade, carbon can be detected. Red hot vapours of carbon can be detected in some other stars emitting a bluish-white light and possessing a temperature of 15,000—20,000 centigrade. Here too carbon remains in the form of separate particles of matter. In the spectrum of the white stars, having a temperature of 12,000 centigrade we trace the 'Bars' pointing to the presence of a most primary type of chemical compound, hydrocarbons. Thus, atoms of two different elements form a more complex compound, the chemical molecule, for the first time. This became more sharply pronounced in the spectre of cooler stars, yellow 'Red type' having a surface temperature of 4,000. This Astrophysical study gives us a position to start with. During the following stages we move gradually towards some more facts obtained by Geophysical and Physico-Chemical studies. These facts are to be linked up with some other facts obtained by the science of Biochemistry and then, lastly, we reach the domain of Biology proper dealing with settled fact of developing life.

SIMILAR CHEMICAL COMPOUNDS IN METEORS AND EARTH

The spectroscopic studies further show that some chemical compounds in the form of molecules of hydrocarbon (C. H. Methine) Cyanogen (C. N.) and dicarbon (C_2) are present in the sun. The study of the meteorites also would supply us with very important data. Roughly, there a hypothesis may be formed that the Sun and our Earth being coeval, the presence of organic compounds in both are of similar nature (Oparin, p. 35, *The Origin of Life*). Carbon which appeared on the Earth's surface entered into combination with Earth's hydrosphere resulting in the products of hydrocarbon oxidation. Various spirits, aldehydes, ketones, acids and other elementary organic substances appeared combining in them these elements, carbon oxygen and hydrogen, some already found in water. The fourth element, nitrogen, played a definite part in formation of the earth in the forms of ammonia, amides, almines, etc. These are all relatively simple compounds with comparatively small molecules, but they all present a newly emerged factor, a qualitative change in the process of evolution. They are guided by new laws which rise out of these new compositions. The next important change towards the phenomena of life is the formation of a substance known as proto-protein.

PROTO-PROTEIN

Hydrocarbons and their derivatives are of immense chemical potentialities. Inspite of a very slow process of reaction, a great number of varied and extremely complex interactions takes place mainly in three ways, *viz.*, condensation (lengthening the carbonic chain and reverse process of disrupting link between two carbon atoms), polymerisation (bridging two organic molecules with oxygen or nitrogen, and the reverse process of hydrolysis) and oxydo-reduction. Besides, there are reactions involving transference of phospheric acid, amino-nitrogen, methyl and other groups from one molecule to the other. Almost all of these chemical reactions and transformations of substances take place in the living organism; the study of the mechanism of respiration, fermentation of various types of substances indicate that they are based on long chains of chemical transformations.

PROTEIN GROUPS

Interaction between the elements of water and organic substances lies at the basis of the entire vital process, although the reaction is very slow in the primitive ocean which was a solution of elementary organic substances. From various complex organic compounds in Earth's hydrosphere, formation of protein substances originated. Proteins are of vital importance in the make up of vital substance. Protoplasm, the material substrate which forms the bodies of animals, plants and microbes all contain a substantial amount of protein which when chemically analysed may be found to be composite bricklets known as 'amino-acids'. A protein molecule is thus .built of bricks of different sorts Some molecules contain all 'amino acids' (30 in all known so far); others are less complex. Amino-acidic compositions determine the physico-chemical properties in a protein substance. The amino-acidic particles are linked in a definite manner in the albuminous chain, building up a particular protein. Great variety of proteins account for the later development of the organisms differently constituted. These proto-proteins are made up of albuminous substances formed somewhat in a less orderly way in our planets' hydrosphere. They are built up of gigantic molecules and are of great chemical potentialities which, under certain conditions of material development, could be transformed gradually into living beings.

CO-ACERVATES

We discussed how initially protein substances were dissolved in a primary solution. But then, these particles began to combine and form molecular piles, until finally they separated from the solution in the shape of microscopic droplets or 'co-acervates'. 'Co-acervate drops' absorbed various organic substances from the water solution they floated upon and at the latter's expense increased in volume and weight. This growth was uneven: some grew faster, others slower. The internal structure of the quickly growing drops became more and more complex and later adapted to nutrition and expansion. This state of existence appeared as a distinctly different one when compared with earlier compositions. A new feature, a qualitative change in the organisational design, was indicated by the co-acervate drops which went on changing in their structure and improving for millions of years. The simpler 'co-acervates' perished; the more complex grew and multiplied by division. In the long run they gave rise to the simplest living creatures, the 'protoplasm'. This fact that the 'co-acervates' remained distinct from their environment bears a strong similarity with the present day 'protoplasmic substance'. If we squeeze out the protoplasmic substance of a plant cell and put it into water, the 'protoplasmic substance' will not mix with water, and will remain in a state of isolated belt in the surrounding solution. Protoplasm is not merely a combination of 'colloidal substances', though very often the particles combine and form whole cluster-complexes under the influence of diverse factors. Very often this process leads to the separation of 'colloidal substances' in the form of a 'precipitate', a phenomenon known as coagulation. Thus as a result of the mixing of colloids the 'co-acervate drops' appeared as an important stage in the evolution of primary organic substance forming original life. The formation of an individual 'co-acervate drop' would mean an isolation from the environment and concentration of molecules of organic substance at definite points in space and no more in a haphazard way. These intricate organisations were guided by 'colloido-chemical laws' coming out of 'colloido-chemical relations'.

The next step is in an advance towards a rudimentary organisation of 'living protoplasm'.

PROTOPLASM

The basic mass or 'protoplasm' remained in a fluid state. It constituted an intricate and complex 'co-acervate', composed of numerous and diverse patterns of highly molecular organic substances, primary protein, fat like compounds, etc. Still, it is not perceptible even with the help of the present-day most powerful microscope. Fragments of gigantic protein, filamentous 'colloidal properties' forming large clusters, got dissociated from the main mass of 'protoplasm' having a definite shape of microscopic drops like mucin, plastid, mitochondria, etc. The vital process, unlike a mechanical process, must be characterised by metabolism (chemical interplay of the individual components of protoplasm). The protoplasmic complex thus formed received from its environment diverse chemical compounds. It continued to receive and discharge a steady stream of new particles of substance while the inside was subjected to various changes and transformations. This can be understood as a process of assimilation. Moreover, the protoplasmic complex never remained in a stable state. It was being constantly broken down and built up as a result of varied interlinked reactions of decompositions and syntheses. The more complex a system the more numerous the reactions. They occur in a strictly consecutive and harmonious way and are confined in a state of single and complete system. As a result of synthesis of protein from amino-acids, the living protoplasm acquired the rhythm of structure and definite arrangement of amino-acids.

ENZYMES

Now, the point remains to discuss the reasons behind the basis of the above mentioned arrangement and order. The leading role of course belonged to the chemical potentialities of the substances which built up a 'protoplasm'. The nature of their reaction was to continue in a very slow speed, almost at a sleepy speed, in the primary organisations. Whereas in the organisms as at present the chemical reactions would occur in an astonishing speed. The chemical reactions taking place at such speed inside the protoplasm can be understood with the hypothesis about a number of special biological catalysts, the so-called 'Enzymes'. All enzymes are found to be protein, pure or combined, with non-protein substances. As regards the nature of their reactions, enzymes would bear full resemblance to inorganic catalysts, though they would differ only in the strength of action. The organic substance, which changed in the metabolic process, formed for a short time a complex compound with its corresponding protein enzymes. The complex was not stable and underwent further changes in a series. Thus, enzymes provided living matter, not only with a powerful acceleration of chemical process, but also with an internal chemical apparatus, which helped to direct this process into definite channels.

Each of them is capable of specifically catalysing only one definite reaction; only in combination and by strict co-ordination of their action could they create that regularity of phenomena, which was lying at the basis of metabolism. Life occurred during this development as a new and more complex mode of the organisation of matter, an organisation dependent on laws of a higher order than those prevailing in inorganic nature.

UNIT ORGANISM

We have tried to trace out the history of life from the original inorganic and individual properties to a higher level of carbon compounds; and from organic hydrocarbon compound to a further development of proteins; and from protein state to still higher stages of colloidal combinations and co-acervate compositions; again from co acervate composition to a still more complex functioning of the enzymes. With the background of a dynamic nature, the newly achieved state of a 'living protoplasm' had to develop further self-preservative characteristics and stability, implying the most fundamental characteristics of a complex life-organisation. In the 'co-acervate drops', coordination among separate chemical reactions was comparatively poorly developed; organisation of newly arising colloidal sectors, changing constantly, were susceptible to decomposition. The synthesis would be haphazard and unstable in nature. Only then did the colloidal systems acquire a more or less permanent stability, when synthesis in them had been better co-ordinated and regularly presented in course of the repetition of those syntheses. That was how gradually the fortuitous distribution of amino-acidal residents, characterestic of primary protein-like compounds, was gradually substituted by a more definite structure of protein globule. Permanency of chemical composition in individual colloidal formation gave birth to a certain permanency in this structure, built in a definite way; the proteins and the characteristic of this colloidal system were combined, not fortuitously any more but in a more regular manner. The unstable, transient structure of primary co-acervates was replaced by a more guaranteed spatial organisation, showing a definite superiority in enzymatic reactions of synthesis over break-down. Thus the background had been formed for the fitness of an inner structure of a definite and vital organism in concrete condition of existence and not in a moment of 'special creation' or manifestation of 'vital force'.

FROM PRECELLULAR STATE TO CELLULAR BODY

We further can trace gradual complication and perfection of the newly formed organism, a qualitatively new form of living matter which can be understood as the simplest living creature. The life which has emerged in a structure of first protozoic organisms is no doubt much superior to the older existence forms, like the 'co-acervate drops', though they still lacked the cellular structure which appeared at a much more advanced stage in the process of development. This aspect of the development of cellular structure has been worked out by Soviet scientists like Prof. Lepeshinskaya and others. They have studied the different functions of the enzymes, yeast, yellow of the egg, and pronounced that the living substance is capable of assimilating the external environment and developing into cellular structure. In the same process of development unicellular organisms were substituted by better organised multi-cellular structures. Life emerged, life then developed further in other forms of more complicated end, more perfect modes, characterised by a principle, the principle of natural selection of the fittest one, as Darwin proved about one hundred years ago.

CONCLUSION

Hundreds and thousands of years passed. Living things at first fed on organic substance alone. Later on, they worked out a process of building up organic substance out of the materials of inorganic nature *i.e.* out of carbonic acid and water, probably because the quantity of organic matter gradually decreased. They also developed a capacity to absorb the energy of the sun, decomposing carbonic acid with its help, and building up organic substances out of carbon in their own body. Simple plants, blue green algae, were the first evolutes of this type. Other living creatures continued to feed in the old way and the algae became an additional item of food for them.

MARCH OF LIFE

Life marched on through Eozoic period of unicellular living beings, both plants and animals, towards multicellular existence lasting for millions of years. Life stepped into a still higher level of Paleozoic period. The Cambrian period (about 500 million years ago) had seen life confined to seas and oceans. The next period is the Silurian period when the vertebrates appeared for the first time and that too in sea. Three hundred and fifty million years ago the Devonian period had seen the real fish and animals resembling present-day shirks. One hundred million years later, the reptiles and gigantic ferns were the characteristic growth of carboniferous period. Two hundred and fifty million years ago the Permian period began. The egg-laying reptiles, and huge lizards went on roving both in the sea, sky and on the surface of the earth. The reptiles, snakes, ichthyopsida reigned over the earth's surface throughout the entire length of Jurassic and Cretaeceous periods.

Age of mammals had started about thirty five millions years ago. The reptiles died in the middle half of the Tertiary period. The animals and flowers resembling present day life appeared in the second half of that Tertiary period. Anthropoid apes had already come into existence. About a million years ago, on the borderline of the Tertiary and the Quarternary periods, the ape-men had appeared. In the Quarternary period, during the Ice Age, the earth had seen already a real man, the most glorious achievement of nature in the process of evolution. Life continued to develop further.

Thus science would refute the theories of special creation or chance origin of living creatures. Life thus can be shown to have a concrete basis in the nature of facts, shorn of its mysterious colouring.*

* Note by the writer: The paper was read at a sitting of some of my fellow-teachers at Patna. I owe an apology to all for any unintentional misrepresentation of facts, as I claim only a very limited knowledge of the different fields of science. I owe a lot of thanks to some of my scientist friends who have helped me with valuable suggestions for preparing this paper. I am indebted to the authors from whose works I have taken materials for this subject, a list of which is appended herewith.

1. Physical Basis of Life	Bernal.
2. The Origin of Life	Oparin.
3. In the Land of Soviet Union	Oleg Pisarzhevsky.
4. Fundamentals of Michurin Biology	Stoletov.
5. Biography of the Earth	Gamow.
6. The Science of Life	Wells & Huxley.

THE ECONOMIC AND POLITICAL MILIEU DURING THE TIME OF THE GREAT BENGALI POET NABIN SEN
(1850—1905)

DR. MISS INDIRA SARKAR

Nabin Sen (1847-1909) held forth as author for nearly four decades starting from 1871 onwards. The period of creativity falls within the last thirty years of the nineteenth century and the first decade of the twentieth. His first work, *Avakasha-Ranjini* (Leisure-Entertainer), Vol. I. was published in 1871 and his last work, *Amritabha* dealing with the life of Chaitanya, published posthusously, was left incomplete at the time of his death. These years are momentous in the history of Bengali literature and civilisation. They generate and witness the *elans de la vie* which ultimately take shape in the transformations and remakings known as the Bengali revolution of 1905. Nabin Sen is an architect, father and pioneer of this revolution and of the ideas of 1905.

During this period the economic pattern of Bengal as of the rest of India, generally speaking, was in the main non-industrial. About the middle of the nineteenth century railways and telegraphs made their *début* as well as coal-mining and jute mills in Bengal and cotton mills in Bombay. The jute mills were in non-Bengali (Scottish) hands. But in Bombay the mill-owners were Indian (Gujrati, Parsi and Maratha). Banking institutions and insurance companies had hardly yet been tried by Bengali and other Indian business organizers. In these lines Bombay Indians were relatively more advanced than Bengalis, both Hindu and Muslim. Industrialisation was to all intents and purposes unknown to Indian masses and classes. The industries in so far as they existed were virtually monopolized by the British *entrepreneurs*. Modern capitalism started its career in India under foreign auspices. Factory legislation was enacted in the 80's of the century. It affected Bombay capitalists. Labour movement was to a certain extent getting established among the mill workers in the cotton mill area. But labour as a category was hardly yet known in Bengal even among the intelligentsia. Bengal as the rest of India continued to be the land of cultivators, artisans and cottage industries as well as of rural population. Calcutta did not have more than 850,000 and Bombay more than 800,000 inhabitants, down to 1900.

On the whole, both journalism as well as *belles lettres*, stories and intellectual curiosity generally were almost non-industrial and non-economic. Poverty was an appalling fact. But the consciousness of publicists, *litterateurs* and thinkers, about the miseries of the teeming millions was not much influenced by realistic economic considerations. It was mere sentimental, humanitarian and philanthropic or religious and moral.

Technical schools and colleges with special reference to mechanical, electrical and chemical engineering were conspicuous by their absence. Sanitary and public health institutions and ideologies did not make their appearance. There were distinguished medical practitioners of the modern type among Indians as well as professors of physics, chemistry, botany and so forth. But researches in medicine or physical and natural sciences were few and far between.

The star-gazers, idealists, highbrows and social reformers or patriots of the second half of the nineteenth century were then chiefly persons of non-scientific, non-technical, non-industrial, non-capitalistic and non-socialistic enthusiasm. Their ideologies of public and social service were derived in the abstract from the study of literature as developed in the progressive countries of the west, especially of England. The University of Calcutta as well as the other Indian Universities served to cater among young intellectuals morsels of theoretical knowledge in arts and sciences. It was poetry, fiction, philosophy, logic, economic and political theories, elementary physical and chemical ideas and so forth that constituted the spiritual food of Young India. It was as a youngster nurtured in the all too philosophico-literary and speculative milieu of Calcutta University and untouched by industries, banks, factories, mines, workingmen, labour-movement and so forth, that Nabin Sen developed and exhibited his creativities as a poet, man of letters and thinker.

It is to combat this ultra-literary, ultra-theoretical and ultra-speculative tendencies of thought and life that the revolution of 1905 was engineered by Young Bengal. Bengalis wanted to industrialise themselves, introduce machinism and capitalism as well as organise schools for modern science, technocracy and engineering and assert themselves as peers of the politically free nations in achievements of all domains. These are the ideas of 1905 associated with the *swadeshi* movement. In the making of this ideology Sen's speculative idealism had a great part as a foster-nurse and a transformer.

• It is not irrelevant. to note here that in Europe also it is during the transition between pre-industrial and industrial ages romanticism in literature and art floursihed. Or, at any rate, European romanticists hardly ever considered it worth while to attempt grasping the economic conditions in a realistic manner. Their social philosophies were more or less idealistic and utopian. We may refer to the works of Lamartine (1790-1869), Vigny (1796-1863), Hugo (1802-1886) and Musset (1810-1857). The industrialisation of France was in its infantile stages, so to say, while these romanticists were holding forth. In the case of Hugo, perhaps, the influence of industrial economy may be said to have had some role. But although, the socio-economic conditions of France hardly affected the romanticists, Bengal during the second half of the nineteenth century, chiefly agricultural and rural as it was,—was nearly indentical with France during the first half. Madhusudan Datta (1824-73), Rangalal Banerji (1826-87), Dinabandhu Mitra (1830-73), Bihari Chakravarti (1836-94), Hem Banerji (1838-1903), Nabin Sen (1847-1909)—all these romanticists of Bengal, like the romanticists of France, had their spiritual urges almost uninfluenced, so to say., by the economic conditions. The works of British romanticists, Coleridge, Wordsworth, Shelley, Keats, and Byron, were likewise uneconomic and unindustrial. Goethe, Schiller, Klinger and other romanticists of Germany flourished under the agricultural and wirtually non-industrial regime of Central Europe, during the early years of the 19th century.

Politically the period witnessed the beginnings of the nationalist movement. Agitation of intellectuals, lawyers and industrial pioneers against the British bureaucracy and bourgeoisie was getting more and more vocal. Indian National Congress was established in 1885. The sessions of this body became the nucleus of organised and systematic propaganda among the highbrows and higher intellectuals. One of the chief targets was the British tariff and currency policies which had been adversely affecting the growth and development of modern industries in Indian hands Another target was the inequalities between Indian and British on Indian soil in regard to the services and other fields of activities. The democratic language and egalitarian theories of Jeremy Bentham and John Stuart Mill, were on the lips of the fathers and volunteers of the Indian National Congress as well as in the columns of the daily newspapers. Lawyers and journalists were adept also in the humanitarian principles ot the

French and American revolutions. They knew how to quote th precedents of constitutional progress from British parliamentary history. All this was very simple to the scholars of the Universities.

But in the actual political fields the only democratic institution known to Indians were the municipalities and district boards established by the Local Self Government Act of 1887. The discrepancie between the ideology of the text-book and the realities of public lif were too glaring. Hence the conflict between Young India and th British *raj*. The tug-of war led ultimately to the demand for *swara* (self-rule) on Colonial (Dominion) lines as one of the planks of th Bengali revolution. The *swaraj* ideology became the life-blood o Indian leaders, intellectuals and youngmen along with the industrial mechanistic ideas of 1905-10. The politics or *swaraj* has in the lon run led up to the establishment of two Deominions in 1947 (Augus 15). It is worth while to note that our Nabin Sen was a feeder o the consciousness and a maker of the milieu in which the *swara* ideology got a natural habitat.

THE ROLE OF THE AYURVEDA IN MODERN INDIA

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The Ayurveda (आयुर्बेद), though very ancient, is the most useful, effective and practical science of healing that is prevalent in the modern world. It deals not only with the origin and symptoms of diseases and therapeutical art, but also with a deep outlook on the creation of human beings, their internal and external functions and faculties, and the ways and means of their living long and happy lives. Now-a-days people generally think that there was no scope of scientific research, of accurate investigation and examination in the days when the Ayurveda was compiled, and that its compilation depended upon the contemplation and meditation of the ancient sages. But when one reads Charaka (चरक), Susruta (सुश्रुत), Bagbhata (वाग्भट)and other treatises on the subject, written probably before 1000 B.C., one will fail to understand how this great science could grow up with so accuracy and effectiveness without deep investigation and careful research. Besides, the Ayurveda is perhaps the leading science of healing that introduced surgery and obstetrics and other acute methods of treatment.

Before proceeding with the discussion on the subject, let us first see the aim and object of the Ayurveda.

Ayus (आयुः) or the span of life is a close contact of the *atma* (आत्मा or the spirit of animation) with the body, mind and organs of perception. So, the Ayurveda is the subject in which the beneficial and unbeneficial matters of *ayus*, its idiosyncracy, its standard and its four different kinds have been discussed. The four kinds of *ayus* are *hitayus* (हितायुः), *ahitayus* (अहितायुः), *sukhayus* (सुखायुः) and *asukhayus* (असुखायुः). The person who is truthful, honest, peace-loving, prudent, temperate, sober, thoughtful, meritorious and charitable, who wishes good of all creatures, studies arts and science, shows respect to superiors, serves the overaged persons, enjoys the three great objects of life, *viz.*, religion, wealth and desire, who does spiritual and material duties with similar devotion, who has no special attraction for any enjoyable matter, no hatred and jealousy, no passion or anger and no egotism is called *hitayus* ; and the *ayus* of a person who leads his life against these principles is *ahitayus*

The *ayus* of a man who is not attacked and overcome by any physical and mental troubles, who has youthful spirit and strength, ability and valour, who likes arts and science, whose organs of perception are so sharp that he can enjoy the nature and all enjoyable things happily, who is rich but not proud. who can begin and successfully finish any work and can freely move anywhere he likes is *sukhayus*, and a person of quite opposite nature is *asukhayus*.

The aim of the Ayurveda is to make every person either *hitayus* or *sukhayus*, and its method of treatment is based on this object.

The main principle of the science of healing is to adjust the cause and effect of diseases, and this principle has been carefully and effectively followed by the Ayurveda. It has eight different sections, *viz.* (1) *salyatantra* (**शल्यतन्त्र**), *i.e.*, surgery; (2) *salakyatantra* (**शालक्यतन्त्र**), *i.e.*, the treatment of diseases of eyes, ears, nose, throat, etc., that lie on the upper part of the collar-bone ; (3) *kayachikitsa* (**कायचि कत्सा**), *i.e.*, the treatment of the body below the collar-bone ; (4) *Bhutavidya* (**भूतविद्या**), *i.e.*, treatment of mental diseases arising out of natural or unnatural phenomenal causes ; (5) *Kaumaravritya* (**कौमारभृत्य**), *i e*, treatment of infants and eradication of their diseases arising out of mother's milk, nipple, sucking, etc. ; (6) *Agadatantra* (**अगदतन्त्र**), *i e.*, the nature of poisons arising out of bites of snakes, scorpions, rats and other venomous insects and its adequate treatment ; (7) *Rasayanatantra* (**रसायनतन्त्र**), *i.e.*, an elaborate explanation of premature age and the nature of treatment for stopping it, and also for increasing longevity, intellect, retentive power and strength, and for preventing dilatory diseases ; (8) *Bajikaranatantra* (**वाजीकरगतन्त्र**), *i.e.*, spermatic treatment, improvement of spermatic chord and of masculinity.

These sections show how scientifically the Ayurveda followed the method of examining the constitution of a patient, and prognosis, diagnosis and treatment of various diseases.

It is a stern fact that the modern science of healing like allopathic system guides the physicians to handle and treat only the disease ; but the Ayurveda instructs its learners and practitioners to deal with the patient as well as his disease. So the Ayurvedic treatment is as varied for the same disease as the internal and external constitutions of the patient which become jeopardized by the disorder of *tridashas* (**तिदोष**), *viz.*, *vayu* (**वायु**), *pitta* (**पित्त**) and *kcpha* (**कफ**). The equilibrium of these three *doshas* (**दोष**) keeps the living organism healthy and sound. This fundamental principle of Ayurvedic treatment is much more important and effective than modern allopathic treatment, for it does not work on a part, but on the whole human structure which may increase its longevity. The first part, *viz.*, the *Sutrasthan* (सुत्रस्थान) of Charaka-Samhita (चरकसंहिता) contains elaborate description and effects of metabolic activities of *tridoshas* which is worth attentive study and close research.

Tridoshas keep the metabolic balance of living organisms. The Ayurvedic term of *dosha* (दोष) does not mean 'harm' or 'fault' or 'hormones'. It may be literally called morbific diathesis. The interpretation of the principles of the Ayurveda in English by some allopaths and others is in many cases ridiculous and misleading ; and practically speaking it is difficult to explain clearly the significance of the Ayurvedic theories in English, until and unless some arrangement is made by our National Government for the purpose. *Vayu* is translated as air or wind, *pitta* as bile and *kapha* as cough or phlegm. But the Ayurvedic *vayu*, *pitta* and *kapha* are not 'air,' 'bile' and 'phlegm'. The three may be expressed to some extent in English as the complex phenomena of physico-physio-psychological organs of human body. They are always trying to guide the lesions in an organized way. Of course, there are cases in which lesions become malignant from the very start of life. There are also numerous cases of lesions turning malignant due to habit and other causes. This metabolic or *doshic* changes have been clearly explained in the Ayurveda and it has arranged radical treatment to remove this metabolic unbalance as far as possible.

All living beings have a number of well-organized and developed tissues, which keep the organism normal and healthy, so long as the work of the tissues and organs remain well-balanced and fairly co-ordinated. This may be called balanced metabolism or the equilibrium of *vayu*, *pitta* and *kapha*. But when any of these becomes malignant, the balance of organism is shattered, and it brings disaster in course of time. Animals are guided by natural instinct and they do not change their home ; so there is little *doshic* or metabolic constitutional unbalance in their organism. But human beings bring this problematic unbalance through their agnosticism and indiscretion.

Vayu, *pitta* and *kapha* impart motion of living organism and keep the brain, nerves and cells in order. None of them have any separate water-tight action without the help of the other two. The metabolic activities of any of these three cannot be divided absolutely from another for its particular work in living organism. The activities of one may easily affect the activities of the other two to some extent,—one may be affected to a greater degree and the other to a lesser degree. The normal activities of the three keep the living organism in good order. The *doshic* influence is thus based on relativity of the one with the other two, and not on the special purity of each. The *doshic* triad is not only affected by food and drink and other things required for maintaining the body structure and organs, but also by the climatic condition.

There are different climatic zones in this world,—some are hot, some cold, and some are neither cold nor hot. This climatic condition has a great influence on internal and external, physical and mental constitution of living beings. It is said in the Ayurveda that the people of hot countries have strong *bata* (बात); for, a man without *vayu* tendency cannot tolerate heat. So also the people of cold countries have strong *pitta*; for, it enables one to tolerate cold. The people of temperate zones have strong *kapha*, which maintains the equilibrium of *vayu* and *pitta*.

According to the Ayurveda *vayu* is cold in nature, *pitta* is hot, and *kapha* has the even nature of cold and hot and it maintains the equality of *vayu* and *pitta*. The time of death has also been ascertained on the same principle. Generally at the time of death *vayu* increases and *pitta* decreases. The people of India can tolerate heat, but not cold. So death occurs here at the time when cold increases during day or night. So it generally happens after midnight when cold increases. The modern medical science also says that the heat of blood comes down by a degree or so at midnight Another time of death comes after midday and remains till evening, for this time also increases *vata* (बात) tendency. In the Ayurveda these two specific periods of day and night have been described as equal in nature to the rainy season and winter respectively. According to the opinion of Western scientists death generally increases in India during August and December every year, and this view tallies somewhat with that of the Ayurveda. The diseases arising out of the increase of *pitta* generally brings death at day-time till midday.

If and when the climatic condition of a particular zone rules over the living organism, it is desirable to make research on how it affects and to what extent, if a man changes his mother-zone and leads his life in another zone.

There is no mention of microscope in the Ayurveda, but there is mention and accurate description of numerous microbes, germs and bacilli that work in entrails, blood, etc., and bring many kinds of diseases. Susruta has given a vivid description of seven kinds of invisible germs growing out of blood. He has also mentioned of numerous other similar germs and how they bring various diseases. This bacteriological matters must have been discovered by examining thousands of people who suffered from diseases caused by bacilli, but it seems strange how the Ayurvedists could find them without the help of a microscope.

Some of the basic principles of the Ayurveda clearly show that there is an extensive scope of research, examination and observation regarding its doctrines. Allopathic treatment and medicines came to our country from western zone, that is, from a cold to a hot zone. It is essentially necessary to find out if this change of treatment and the use of medicines of cold climatic regions have done any harm to the people of our hot country. It is found that the average longevity of the people of India is rapidly coming down day after day. Even now it is found in some rare cases that a man who has full faith in the Ayurvedic treatment and medicines lives comfortably longer than those who have little belief in the Ayurveda. Of course, the different zones of the world has become mixed up now-a-days through the people running from one country to another. But in spite of this it is desirable that the medical science of a particular zone, like the Ayurveda of India, should be adjusted, after careful researches, to the change that has come down to our country. But unfortunately no such action is being taken even after we have become free. Plans are being made for the improvement of the country in industry and finance, and also in health, but not on the basis of the Ayurveda, our great national medical science, but on the principles of foreign science.

The Ayurveda discards the principle of injecting to human body any poison taken from other animals to counteract particular diseases, like pox, erysipelas, etc. There is little scope of dealing here with some malignant diseases which ruin the health and hasten the death of man. The Ayurveda has good theories and effective advice for their prevention and cure. Vaccination and similar other process of prevention are not known to the Ayurveda. But it has directions and medicines to prevent the attack of pox and many other infectious and malignant diseases. Unfortunately very few people of our country, where this great science is born and brought up in ancient times, believe in its methods and medicines. If our National Government gave full attention and made due arrangement for elaborate research on the Ayurvedic principles of treatment and medicines and made it up-to-date, many harmful diseases might be prevented with great success and it would have become more popular than it is now. There are many veteran and eminent Ayurvedic and Allopathic physicians and surgeons who can help the Government in the matter.

Most of the people of upper grade of our country are constantly trying to drive away English language from this land, but they are firmly grasping at the ostentatious customs and habits of the English which they left behind them when giving up their predomination on our country. When these people are doing so, the persons of lower grade cannot but follow them, particularly when the people's Government is following the same principle. So, the Ayurveda, the most valuable and popular medical science of our country, is not receiving due care and attention of our Government, because it has no close touch with the Western Science. In some parts of India it is receiving some patronage of the State Governments, but in many states it is being neglected in spite of strenuous efforts of the Ayurvedic physicians. For example, we can cite the case of West Bengal.

In 1939 a "General Council and State Faculty of Ayurvedic Medicines, Bengal" was established by the British Government. This Council registered the names of the efficient Ayurvedic practitioners, and their medical certificates were accepted by the then Government. But at present when our country is free and the Government is national their certificates have no value and they are thrown away everywhere—in Government and private offices. No practical scope of study and research on the Ayurveda is given ; only some paltry help is given to the Ayurvedic Colleges that have been established by private enterprises during the British rule which supported and helped them.

When we consider the role of the Ayurveda in modern India we become despaired of any success of this great medical science which is not receiving as much patronage of our National Government as the foreign medical science. Of course, we should not say that allopathy should be cornered, but we should say that due arrangement should be made for elaborate and careful study of the Ayurveda by establishing a Central Ayurvedic Research Institute, and its branches in different States ; that adequate money should be allotted to the Ayurvedic research and Ayurvedic hospitals should be established for the purpose, and that it should be a broad item of the next Five-year Plan. A large amount of money has been and is still being spent on allopathic researches on some diseases, though the methods of the Ayurveda are more effective to our land than any other science. If a part of the amount had been and even now is being spent on the Ayurvedic researches on those diseases, the results probably would have been and will be more fruitful than that achieved so far by allopathic researches. But no satisfactory scope is given to the Ayurveda which could bring back sound health and longevity of the people of our country for whom this great science was built.

It is a sad thing that our Government is taking some steps which are detrimental to the interest of some efficacious Ayurvedic medicines. Taxes have been imposed on *aristas* (अरिष्ट) which hamper their production to a great degree, though there is enough demand of them and the people feel really hale and hearty when they take them on the advice of the physicians. There was no such taxation on Ayurvedic medicines even during the foreign rule. Government would have done good to the suffering people if they tried to help the producers to bring down the price of the Ayurvedic medicines by supplying some of the ingredients at a lower price. We hope that the taxes should be withdrawn from all kinds of Ayurvedic medicines which are really useful to the common people of our country.

Let us conclude by citing the view of the great Ayurvedic Scientist, Pandit Shiva Sarma : "In the case of Ayurveda, too, the spirit of scientific inquiry is conspicuous by its absence. An intensive investigation, backed by adequate resources, a genuine study and correct grasp of the Ayurvedic techniques, and a determined effort unhampered by obstruction and sabotage (through ignorance, prejudice or vested interests) may yet yield the cure which has so far eluded the endless and concerted search by the entire scientific world." The Scientist speaks of the cure of Cancer, but we speak about the entire Ayurvedic Science.

THE ABBEY THEATRE

Pronoti Baksi, M.A.

To anyone interested in the revival of poetic drama in modern times, the development of the Abbey Theatre is inevitably an important focus of attention. The Irish dramatic movement which created the Abbey Theatre, was the first real upsurge of poetry in the world of drama since the days of Shakespeare and the Jacobeans. In the Restoration Theatre, prose had assumed the ascendancy and the plays generally contained the spirit of criticism rather than the vision of poetry. In the nineteenth century, though nearly all the major poets, and many minor ones, tried their hands at verse drama, their efforts were mainly in the nature of experiments in a literary form and the stress did not fall on performance. Thus the poetic plays which were written lacked, on the whole, the fire of dramatic inspiration. Drama in general aimed mainly at entertainment in Victorian times; there was gorgeous spectacle in almost every production but very little depth before the sixties. As has been appropriately remarked by Ernest Reynolds, " Nobody went to the theatre to think, any more than they go to the cinema for that purpose today."[1] Henry Arthur Jones started a crusade for serious thought in drama, and this combined with the influence of Ibsen to produce at the end of the century the naturalistic drama of social problems. But though the English drama took over the problem play from Ibsen, it entirely overlooked the poetic drama of his early period and the symbolical and psychological drama of his later years. Thus when the Irish dramatic movement began, the theatre was still dominated by spectacle, but there was a consciousness of shortcomings and a predilection for the naturalistic problem play. Last, but not the least, prose of a pedestrian quality was the general medium for the stage and the most suited to the play dealing with the social problems of the day.

The Irish dramatic movement owes its origin to the vision and the faith of one man, William Butler Yeats. This movement, of which the Abbey Theatre was the result and the symbol, was national in its origins, materials, resources and methods. It was part of the new Irish consciousness of nationality, and together with the new political aims and the revival of Irish culture, the need was felt for a national theatre. The Irish Literary Society had been founded by Yeats in London in 1891 and the National Literary Society in Dublin in 1892.

A Gaelic League was founded in 1893 by several Gaelic scholars. For several years, Yeats discussed with many friends, among them Lady Gregory, the possibilities of finding a small theatre in London or Dublin. Lady Gregory records, " Things seemed to grow possible as we talked.[2] In 1899 the Irish Literary Theatre came into being. Yeats's " Countess Cathleen " and Edward Martyn's " Heather Field " were the first two plays rehearsed. The help of George Moore at this stage put the activities of the company on a more practical plane than they had been. A charge of blasphemy almost held up " Countess Cathleen." But ultimately the season began in May, 1899. For three years plays were produced by training and rehearsing English actors in London and bringing them over to play in Ireland. Thereafter Yeats and Lady Gregory with A.E. (George Russell) became interested in amateur theatre groups of working men and women under William and Frank Fay. The Irish Literary Theatre ended, and this new group became the Irish National Dramatic Company, soon afterwards becoming known as the Irish National Theatre Society. A.E.'s " Deirdre " and Yeats's " Cathleen ni Houlihan " were its first productions (1902). Two new playwrights joined—Seumas O'Cuisin (James Cousins) and Fred Kyan. In May, 1903 the company visited London, thereby bringing the Irish dramatic movement to the notice of the literary world of England and incidentally arousing the interest of Miss Horniman, whose financial helps enabled the Society to acquire the Abbey Theatre a year later. The early policy of the Abbey Theatre may be summed up in Lady Gregory's words, " We went on giving what we thought good until it became popular."[3] The path of the Abbey Theatre was not smooth. The plays, new in theme and form, of the aroused violent animosity; for instance, the selling of souls for gold in " Countess Cathleen " was construed as blasphemy and riots occurred among patriotic Irishmen at the allegedly unfavourable interpretation of Irishmen in " The Playboy of the Western World." On several occasions the plays were produced under police protection, but after being witnessed, they generally won popularity. Differences of opinion between the managers and the departure of the Fays from the company caused a slight setback towards the end of the first decade. In 1911-12 the Company undertook a tour of the United States of America. Their reception varied from town to town. New York and Philadelphia, for instance, were hostile at first while other cities received them with enthusiasm. Since then new playwrights have joined the Abbey. Some have drifted away again to other forms of writing and other occupations. Men like Padraic Colum and T. C. Murray have made valuable contributions to the theatre before taking up other interests. In 1951 a fire partially destroyed the Abbey. Plans are being drawn up for a larger theatre on the same site but practical difficulties have yet to be surmounted before the plan is completed.

When it was established, this new theatre of Ireland had a new set of ideals and objectives distinct from those prevalent at the time. The main charge against the nineteenth century was that it started the commercialisation of the theatre; the Abbey Theatre, on the other hand, was devoted to pure aestheticism and idealism.

In the first place, these ideals were poetic ideals. Yeats, the main force of the movement at its inception, desired the exploitation of ' the living imagination in drama. Journalism and second-rate literature had atrophied men's imagination; he felt that the drama of his time was no longer progressing and must be reborn if it was not to perish entirely. Contemporary drama stressed the manner of presentation rather than the matter presented; little or nothing was left to the imagination of the audience. In the Abbey Theatre prime importance was given to the words, the poetry of the drama.

Yeats found in the peasants of Ireland the poetry that he could not find elsewhere. The peasants combined a love of the heroic and the homely with a certain imaginative spirit, and their language was still instinct with spontaneity and suggestiveness. In the Samhain (1904) Yeats speaks of " that conversation of the people which is so full of riches because it is so full of leisure, or . . . those old stories of the folk which were made by men who believed so much in the soul, and so little in anything else, that they were never entirely certain that the earth was solid under the foot-sole."[4] Elsewhere Yeats says, " One can write well in that country idiom without much thought about one's words; the emotion will bring the right word itself, for there everything is old and everything is alive and nothing common or threadbare."[5] Synge puts this view in a more concrete manner in his preface to " The Playboy of the Western World : " In a good play every speech should be as fully flavoured as a nut or apple, and such speeches cannot be written by anyone who works among people who have shut their lips on poetry. In Ireland, for a few years more, we have a popular imagination that is fiery, and magnificent, and tender; so that those of us who wish to write start with a chance that is not given to writers in places where the spring-time of the local life has been forgotten, and the harvest is a memory only, and the straw has been turned into bricks.[6]

The Abbey Theatre thus introduced a new diction into drama. Yeats realised that the national theatre would remain hopelessly parochial unless it adopted English as its language. He effected a compromise by using the English spoken by the peasants of the east and west of Ireland. These peasants were mainly bilingual and translated into the English they spoke, the syntax and imagery of the Irish language. Lady Gregory, who was also bilingual, was of immense help to Yeats in forming this new diction. It was Yeats again who rescued Synge from the barren work of French art criticism and sent him to the Aran Islands in the west of Ireland to learn the common speech and become a playwright. This search for poetry among the peasants implies that the results of civilization and sophistication have not been entirely salutary. This has an affinity to Wordsworth's views which led him to seek the elemental passions and feelings of man in the rural classes.

Secondly, the dramatists of the Abbey Theatre brought back imagination into drama. The nineteenth century concentrated on realistic splendour of presentation and did not encourage the audience to give the greatest importance to the actor and his lines. Yeats had a complaint regarding the plays of the naturalistic school dealing with modern educated people also. The chief character always seemed to be uninspired, gushing and sentimental. In fact, the plays could never become impassioned without making someone gushing or sentimental. This was due to the fact that educated well-bred people are not supposed to wear their hearts on their sleeves, nor have they got any charming or artistic language except in light conversation. Powerful language of passion they do not have and when deeply moved would merely stare silently into the fireplace such a reaction could not ordinarily be either dramatic or poetic. To the Irish dramatists, who were not under the sway of naturalism, beauty and truth were justified of themselves and their creation was a service to mankind. These men turned to their Celtic heritage for their inspiration; they recaptured the spirit of wonder and old-world magic as they explored the avenues leading back into the realms of Celtic myths and legends. Lady Gregory translated into English prose the two great bodies of heroic legends surrounding Cuchulain and Finn in " Cuchulain of Muirthemne " (1902) and " Gods and Fighting Men " (1904). Later playwrights were to make extensive use of these and other translations.

Apart from the subject-matter a resolution was effected in stage decor also. The Abbey wanted its audience to concentrate on the play; hence the setting was kept unobtrusive, generally being a simple background of one colour. To Yeats the poetry was the important thing; even the actors took second place, being merely required to enunciate beautifully. Later under the influence of the No plays of Japan, he advocated the use of masks, in drama and a combination of dance, music, verse and scenery to produce the desired effect. This conception of drama was akin to that already shown by the Wagner Festival at the Bayreuth Festpielhaus in 1876. There, as in the later Irish movement, a new synthesis of music, drama, scenery and philosophy was attmepted. Drama, in Yeats's opinion, should provide intellectual excitement; the mind should go to the theatre to be liberated.

Yeats also believed that remoteness was necessary in drama. It was only by receding from the audience on the superficial realistic plane that an actor could approach and inhabit 'the deeps of the mind.' Yeats maintains that drama has always been associated with ritual, a thing of beauty and magic, not a thing of reality. Art was born as ritual and could be resuscitated only by a revival of ritual. An artist is essentially creative and must not subject himself to Time or Space or verisimilitude. By his overinsistence on ritual, Yeats weakened his drama.

There was an attempt to elementalise the drama and to raise it from the level of topicality. The plays were to deal with the fundamentals of life, thereby acquiring universality. To Yeats poetry constituted reality but to Synge reality—the vital life and speech of the people of the Aran Islands—was poetry. Synge points out, "On the stage, one must have reality, and one must have joy; and that is why the intellectual modern drama has failed, and people have grown sick of the false joy of the musical comedy, that has been given them in place of the rich joy found only in what is superb and wild in reality."[7]

Yeats contributed plays of patriotic and lyrical fervour. In some plays like "The Shadowy Waters," the lyricism swamps the theatrical qualities of the play. Several plays were written in collaboration with Lady Gregory and with Moore.

Synge contributed a peculiar nature-mysticism to the movement and thence to English drama in general. In the Aran Islands he apprehended nature as part of human life. Before him nature had appeared as a background, perhaps very close and well-known to the characters. But in Synge's plays, Nature partakes of human life, as it were. No system of philosophy is indicated by his attitude. Nature appears as an actor recognised by the other actors, sometimes a constant well-known companion as in "Well of the Saints," and sometimes as a more terrible and ruthless force drawing them on to their fates as in "Riders to the Sea."

Lady Gregory's contribution to the movement and to the world of drama is of a slighter and less concrete nature. She experimented light-heartedly with all sorts of forms and made many happy discoveries in details of technique. It was she who developed the dialogue which became characteristic of the Abbey. She also experimented with the one-act play. Her plays show a delicate strength of construction and a gift for quick development of the plot. A mixture of human and patriotism occurs in " The Rising of the Moon," mirth and pathos in " The Travelling Man," " The Dragon " and others. She has left one memorable tragedy, " The Gaol Gate."

In a pamphlet giving advice to aspiring playwrights, the leaders of the Irish dramatic movement insisted on clarity and economy of incidents. One subject should be treated in a play; it was also pointed out that unity of impression could not be attained by attention to dialogue but by shaping and re-shaping the plot.

The leaders left the choice of subject to the playwrights making it clear that there were no specific formulae for drama—any knot of events or incidents involving passionate feeling or clash of wills can produce a play. The pamphlet contains another interesting piece of advice: " A play to be suitable for performance at the Abbey should contain some criticism of life, sounded on the experience or personal observation of the writer, or some vision of life of Irish life by preference, important from its beauty or from some excellence of style; and this intellectual quality is not more necessary to tragedy than to the gayest comedy . . ."[8] The use of Arnold's much discussed phrase ' criticism of life ' is noteworthy: here is a variant of H. A. Jones's advocation of seriousness in drama.

It was the intention of the leaders of the movement to create a theatre " with a base of realism, with an apex of beauty."[9] The playwrights of the Abbey Theatre never forgot the practical aspect of their art. Unlike the literary drama of the nineteenth century, their plays were written to pass the test of performance. Changes were made very often, even to the recasting of scenes, in order to meet the needs of the theatre. The leaders of the movement have also left a valuable body of commentary and criticism, giving us an insight into the working of their minds and information about the early history of the Abbey Theatre.

The Abbey Theatre was started by playwrights who built their plays on the basis of realism but whose minds were fired by poetic imagination. Towards the second decade of the present century the playwrights, such as Murray, Robinson and Colum, developed a more objective style but retained the imagination of their predecessors. There is in the playwrights after Yeats, Lady Gregory and Synge a continuation of the sense of mystery inherent in life, the acknowledgment of spiritual reality along with the reality of the material world.

The plays ranged from tragedy, for instance Colum's "The Hand," Murray's " Maurice Harte " and Robinson's " The Clancy Name," to the satirical comedies of Boyle. Irish peasantry still provided material for drama, but Sean O'Casey turned to the Dublin poor. Between 1916 and 1940 various aspects of Irish life were treated. Sean O'Casey made drama out of revolution, street-fighting and professional gunmen; Denis Johnston dealt with the uneasy peace after the Revolution and the Civil War; George Shiels and Paul Vincent Carroll took up Ireland of the thirties.

The genius of the pioneers of the Abbey has not been equalled by subsequent writers. Sean O'Casey is, perhaps, the only one who can hold his own with them. Brilliant studies of Irish life are contained in " Juno and the Peacock " (1925) and " The Shadow of the Gunman " (1927). Racy realism and symbolical significance are fused in " The Plough and the Stars " (1926) and " Within the Gates " (1933). But his best play is " The Silver Tassie " (1929) which may be regarded in future as one of the most powerful tragic dramas of his time. Unfortunately the subsequent plays of O'Casey have not risen to the same heights, though they show greater power and richness of language than is found in his contemporary playwrights.

No forecast can be made at this stage as to the ultimate fate or the importance of the Abbey Theatre. But the Abbey has made one undeniable gift to the world : it brought back into the drama of the English speaking people the sparkling stream of high poetry that had run dry for two centuries. Thanks are due mainly to Yeats and Lady Gregory without whose tact, courage and dauntless faith, the Abbey Theatre would never have come into being. They succeeded in establishing a true People's Theatre—a theatre which became international in its appeal though inspired by nationalism. It is no mean achievement to have concentrated on Irish peasantry and Irish dialect without losing sight of those fundamentals which appeal to all humanity.

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THE BOOLEAN METHOD OF EXPANSION AND INTERPRETATION OF PROPOSITIONS

RAMAPRASAD DAS

1. *Introduction*

We propose to discuss the Boolean method of expansion of logical equations. Before we go to discuss the method we shall make some prefatory observations that will, I think, facilitate the understanding of the method.

1.1 Expansion and the Excluded Middle Principle: The method of expansion is based on the principle of excluded middle according to which the universe may be divided between any class X and its contrary signified respectively by x and $1-x$. That is, when x represents a class, $x+(1-x)=1$. The formula $x+(1-x)=1$ is in fact the symbolic representation, in the Boolean system, of the principle of excluded middle. It follows that we may also divide, according to the excluded middle principle, any class X into two parts of which one consists of individuals that possess a certain property, say x', * while the other of individuals that do not. Suppose that the members of the class defined by x' possess also the property u'. So the properties x' and u' determine a subclass, UX, of the class X. Suppose further that the members of the class who do not possess x' have, however, the property v' which along with the absence of x' determines the remaining portion of the given class, X. The totality of the class X may, therefore, be represented by

$$ux + v(1-x).$$

The method of expansion is based, it will be seen, on the above mentioned principle of division by dichotomy. In the formula of expansion the symbols corresponding to u and v will, however, be taken, for reasons that will be clear presently, not as indicative of properties but as quantitative symbols susceptible of the values 0 and 1.

1.2 Function: Our exposition of the method of expansion presupposes the notion of *function* which may conveniently be introduced here thus:

any algebric expression that involves a symbol x is called a function of x, and may be represented under the abbreviated general *form* $f(x)$. Similarly, an expression involving two symbols, say, x and y, will be called a function of x and y, and the *form* of such functions will be represented as $f\ (x,y)$. And so on for more symbols; $f\ (x,y,z)$, for instance, is the representation of the form of the functions of x, y and z.

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* A note on symbolism : if X is a certain class then x is the class-symbol that signifies X, and x' the property that determines the class. So with v, y, y', U, u, u' etc.

It must be noted that $f\ (x)$, $f\ (x,y)$ etc. are not functions but forms of functions. Functions are specific *instances* or *cases* that illustrate these forms. Thus $1-x$, $(1+x)/(1-x)$ etc*. are functions that illustrate the form $f(x)$; similarly $x+y$, $x-2y$, $(x+y)/(x-2y)$ etc. are functions of x and y, *i.e.*, instances of $f\ (x,y)$.

1.3 $f\ (1)$, $f\ (0)$ – A Note on Notation: We shall be required to change x,y etc. in a function into 1 and 0. So we require a notation to signify that x, y etc. are changed to 1 or 0. With this end in view we propose the following notation.

If in any function $f\ (x)$ we change x into 1, the result will be expressed by the form $f\ (1)$; if in the same function we change x into 0 the result will be expressed by the form $f(0)$.

Consider, for instance, the function $(a+x)/(a-2x)$. $f\ (1)$ with respect to this function will express the result $(a+1)/(a-2)$ *i.e.*, here $f\ (1)=(a+1)/(a-2)$; similarly, $f\ (0)=a/a$.

2. The Method of Expansion

We are now in a position to take up the method of expansion. In what follows we shall first define *expansion*, and then explain and illustrate, in the light of the definition, the method under discussion.

2.1 Definition:

Any function of the form $f(x)$ in which x is a logical symbol or a symbol of quantity susceptible only of the values 0 and 1 is said to be expanded when it is reduced to the form $ax+b(1-x)$, a and b being so determined as to make the result equivalent to the function from which it was derived.

2.11 Expansion of any Function of the Form $f(x)$: We know that x is a logical symbol or a quantitative symbol that takes as its value only 0 or 1. We also know that the expansion of $f(x)$ must be in the form $ax+b(1-x)$. Let us assume, then, that

$$f(x) = ax + b(1-x)$$

Now, we have (by making $x=1$)

$$f(1) = a.1 + b\ (1-1) \text{ or } f(1) = a.$$

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* We have used "/" to express fractions. But this notation is not unambiguous. $1/2x$, for instance, way signify $\frac{1}{2}x$ or $\frac{1}{2x}$. To avoid this ambiguity we have used brackets that show the *scope* of "/" and the *grouping* of the numerater and denominator e.g. $(1/2)x$ stands for $\frac{1}{2}x$, $1/(2x)$ for $\frac{1}{2x}$, $(1+x)/(1+2x)$ for $\frac{1+x}{1+2x}$, while $1+(x/1+2x)$ for $1\frac{x}{1+2x}$ etc.

Next, (by making $x = 0$) we have

$$f(0) = a.0 + b\,(1-0) \text{ or } f(0) = b.$$

We have thus determined the values of a and b in the equation $f(x) = ax + b\,(1-x)$. Putting these values in the said equation we obtain

$$f(x) = f(1)\,x + f(0)\,(1-x) \qquad \text{(E.1)}$$

The second member of this equation is the expansion of $f(x)$ whatever function $f(x)$ may represent, For x regarded as a quantitative symbol admits only of the values 0 and 1, and for each of these values the expansion assumes the same value as the form $f(x)$.

It must again be noticed that (E.1) is not the expansion of any function, it is the *form* of expansion of functions involving one symbol; that is why f is retained in its second member. Now take a concrete case *i.e.*, a function; consider for instance the function $(1+x)/(1+2x)$. Changing x into 1 we have $f(1)=(1+1)/(1+2.1)$ or $2/3$ and putting in the function 0 for x we have $f(0)=1+0/1+2.0$ or $1/1$ or 1. The required expansion of the given function will, therefore, be $(2/3)\,x+1(1-x)$. Note that the equation

$$(1+x)\ 1+2x=(23)\,x+1\,(1-x)$$

is satisfied for each of the values of which x is, by definition, susceptible. Take another instance, say, $1-x$. Since $f(1)=0$, and $f(0)=1$ we have the required expansion of $1-x$ in

$$1-x = 0x + 1\,(1-x).$$

2.12 Expansion of any Function in the Form $f(x, y, z, \ldots)$: We are concerned now to show the method of expanding a function involving more than one logical symbol. Let us begin with a function involving two symbols *i.e.*, functions of the form $f(x, y)$. We shall first treat $f(x, y)$ as the form of a function of x alone and expand it accordingly (leaving, that is, y as it is). The form of the required expansion will obviously be:

$$f(x, y) = f(1, y)\,x + f(0, y)\,(1-x). \qquad (2)$$

It will be noticed that $f(1, y)$ represents what $f(x, y)$ becomes when $x = 1$, and $f(0, y)$ represents what $f(x, y)$ becomes when $x = 0$. Now take $f(1, y)$. Treating it as a function of y we may (leaving 1 unaltered) expand it thus:

$$f(1,y) = f(1,1)y + f(1,0)\,(1-y). \qquad (2.1)$$

Similarly,

$$f(0,y) = f(0,1y)+f(0,0)\,(1-y). \qquad (2.2)$$

Now, substituting in (2) the values of $f(1,y)$ and $f(0,y)$ as given in (2.1) and (2.2.) we obtain

$f(x, y) = f(1, 1)\,yx + f(1, 0)\,(1-y)\,x + f(0, 1)\,(1-x)\,y + f(0, 0)\,(1-x)(1-y)$ which, in order to retain the order $x \rightarrow y$, may be rewritten as :

$$f(x,y)=f(1,1)xy + f(1,0)(1-y)x + f(0,1)(1-x)y + f(0,0)(1-x)(1-y) \quad \text{(E2)}$$

The second member of the above equation is the full expansion of $f(x,y)$. Here (read, in the following, ":" as "represents what $f(x,y)$ would become when")

$$f(1,1): x=1,\ y=1, \qquad f(1,0): x=1,\ y=0$$
$$f(0,1): x=0,\ y=1, \qquad f(0,0): x=0,\ y=0.$$

Let us now expand, according to the above formula, the function $(1-x),/(1-y)$ a case of $f(x,y)$. It will be seen that with respect to this function $f(1,1)=0$, $f(1,1,)=0/1$ or 0, $f(0,1)=1/0$, $f(0,0)=1/1$ or 1. So the required expansion will be

$$(0/0)\,xy + 0x\,(1-y) + (1/0)\,(1-x)y + (1-x)\,(1-y).$$

Take another example, $x-y$. With respect to this function $f(1,1)=0$, $f(1,0)=1$, $f(0,1)=-1$ or 1 (we shall ignore, for reasons that will be explained afterwards, the minus sign), $f(0,0)=0$. The expansion of $x-y$ will, then, be

$$0xy + 1x\,(1-y) + 1(1-x)y + 0(1x)\,(1-y).$$

2.121 Suppose we are required to expand a function involving three symbols, say, x, y and z, to expand, that is, $f(x, y, z)$. We shall treat $f(x, y, z)$ first as a function of x and proceed as before. We have, then,

$$f(x,y,z) = \{f(1,y,z)\}x + \{f(0,y,z)\}(1-x) \quad (3)$$

For the convenience of reference let us number the second-bracketed expressions as (a) and (b) respectively. Note, then, that $(a) : f(1,y,z)$ and $(b) : f(0,y,z)$ (read ":" as "stands for"). Treating (a) and (b) as the functions of y we get

$$(a)^{*}\ f(1,y,z) = \{f(1,1,z)\}y \;*\; \{f(1,0,z)\}(1-y) \quad (3a)^{*}$$
$$(b)\ f(0,y,z) = \{f\ 0,1,z)\}y + \{f(1,0,z)\}(1-y) \quad (3b)$$

We shall number the above second-bracketed expressions thus—

$(c) : f(1,1,z)$, $(d) : f(1,0,z)$, $(e : f(0,1,z)$, $(f) : f(0,0,z)$.

Now expanding the above forms of the functions of z we obtain

$$(c)\ \ f(1,1,z) = f(1,1,1)\,z + f(1,1,0)\,(1-z) \quad (3c)$$
$$(d)\ \ f(1,0,z) = f\ 1,0,1)\,z + f(1,0,0)\,(1-z) \quad 3(d)$$
$$(e)\ \ f(0,1,z) = f(0,1,1)\,z + f(0,1,0)\,(1-z) \quad (3e)$$
$$(f)\ \ f(0,0,z) = f(0,0,1)\,z + f(0,0,0)\,(1-z) \quad (3f)$$

Substituting in (3) the values of $f(1,y,z)$ and $f(0,y,z)$ as given in $(3a)$ and $(3b)$ we get (retaining the order $x \to y \to z$) :

$$f(x,y,z) = f(1,1,z)xy + f(1,0,z)(1-y)x + f(0,1,z)y\,(-x) + f(0,0,z)(1-x)(1-y) \quad (3.1)$$

Putting in (3.1) the values of $f(1,1,z)$, $f(1,0,z)$ etc. as given in $(3c)$ to $(3f)$ (and rearranging x,y etc. in the order $x \to y \to z$) we have

$$\begin{aligned} f(x,y,z) = {} & f(1,1,1)\,xyz + f(1,1,0)\,xy(1-z) + f(1,0,1)\,(1-y)xz \\ & + f(1,0,0)(1-y)\,(1-z)x + f(0,1,1)(1-x)yz + f(1,0,1)(1-x)(1-z)y \\ & + f(0,0,1)\,(1-x)\,(1-y)z + f(0,0,0)\,(1-x)\,(1-y)\,(1-z). \end{aligned} \quad \text{(E3)}$$

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* Note that (a), (b) etc. refer to the forms of functions $f(1,y,z)$, $f(0,y,z)$ etc., while $(3a)$ $(3b)$ etc. refer to expansions.

2.2 Constituents and Coefficients of Expansion : The expansion of a function consists of certain terms into which x,y etc. enter and also 1 and 0 by which the terms are multiplied.

> The terms are called the *constituents* of expansion and the literal symbols that make a constituent are called its *factors*; and 0, 1 by which the terms are multiplied are called the *coefficients*.

Thus the expansion of $x-y$ consists of four terms: xy, $x(1-y)$, $(1-x)y$ and $(1-x)$ $(1-y)$; these are the constituents of the expansion of $x-y$; x, y are the factors of xy, x and $(1-y)$ the factors of $x(1-y)$, etc.; and 0, 1 etc. in $0xy$, $1x(1-y)$ etc. are the coefficients.

We have explained, it is true, the expansion of functions involving only one, two and three symbols. But it is easy to see the underlying principle of the method of expansion. It will, however, be useful to formulate the general rule for expanding any given function. Since the expansion of a function consists of some constituents multiplied by coefficients the general rule will consist of two parts: rule for the formation of constituents and rules for the formation of coefficients.

2.21. Rule for the Formation of Constituents: The method of expansion treats every function $f(...)$ as representing the universe and requires the universe to be divided between some given classes and their contraries. Suppose we want to divide the universe between two given classes X and Y and their contraries. Obviously there are in this case four possibilities, four sub-classes, represented by xy, $x(1-y)$, $(1-x)y$ and $(1-x)$ $(1-y)$. These classes, it is clear, are exclusive and together exhaust the universe. The rule for the formation of the constituents is to satisfy, in other words, the condition: that all and only the possible class-combinations are represented in the expansion *i.e.* the classes referred to in a given function are to divide between them the universe such that no possible sub-class is omitted, and no sub-class is represented more than once.

Since every class-symbol may be combined with others by logical multiplication in only two different ways, *e. g.* x with S in the form Sx and S$(1-x)$,

> the number of constituents in an expansion will be 2^n where n is the number of symbols involved in a function.

That is, when expanded $f(x)$ will have two, $f(x, y)$ four, and $f(x, y, z)$ eight constituents, and so on. Boole formulated the rule for the formation of constituents of a given function thus:

> Let the first constituent be the product of all the symbols, change in this product any symbol z into $(1-z)$ for the second constituent. Then, in *both* these change any other symbol y into $(1-y)$ for two more constituents. Then in the four constituents thus obtained change any other symbol x into $(1-x)$ for

four new constituents and so on until the number of possible change is exhausted.

Take, for example, three classes: hard things, elastic things and metals, and let them be represented respectively by x, y and z. Following the above mentioned instruction the given classes may be combined, only in the following eight ways, thus:

(1): xyz = hard and elastic metals,
(2): $xy(1-z)$ = hard and elastic things that are not metals,
(1a): $x(1-y)z$ = hard and non-elastic metals,
(2a): $x(1-y)(1-z)$ = hard things that are neither elastic nor metals,
$(1)'$: $(1-x)yz$ = elastic metals that are not hard,
$(2)'$: $(1-x)y(1-z)$ = elastic things that are neither hard nor metallic,
$(1a)'$: $(1-x)(1-y)z$ = metals that are neither hard nor elastic,
$(2a)'$: $(1-x)(1-y)(1-z)$ = things that are neither elastic nor hard nor metallic.

These eight classes taken together exhaust the universe, or in the Boolean terminology, the sum of these classes is equal to 1.

2.211. The above mentioned method for finding the constituents of an expansion may be restated in a simpler way. In this form the method may be uused almost mechanically. We may restate the instructions thus:

> Find out the constituents for one symbol (e. g, x and $(1-x)$ for x in $f(x)$). Let these constituents form a set. Double this set and put the two resultant sets separately—one set above and another below a line. Multiply all the constituents of the first by a second symbol, say y, and those of the second set by its contrary symbol. Let the results form a single set. Double this set and proceed as before with a third symbol, and so on. Thus

$f(x)$ Set (1)	$f(x, -)$ Set (1. 1): obtained by doubling (1)	$f(x, y)$ Set (2): obtained by multiplying the two halves of (1.1) by y and $1-y$	$f(x, y, -)$ Set (2.1): obtained by doubling (2)	$f(x, y, z)$ Set (3): obtained by multiplying the two halves of (2.1) by z and $1-z$
x	x	xy	xy	xyz
$(1-x)$	$(1-x)$	$(1-x)y$	$(1-x)y$	$(1-x)yz$
	x	$x(1-y)$	$x(1-y)$	$(1-y)zx$
	$(1-x)$	$(1-x)(1-y)$	$(1-x)(1-y)$	$(1-x)(1-y)z$
			xy	$xy(1-z)$
			$(1-x)y$	$y(1-x)(1-z)$
			$x(1-y)$	$x(1-y)(1-z)$
			$(1-x)(1-y)$	$(1-x)(1-y)(1-z)$

2.22. Rule for Calculating the Coefficients: Boole lays down the following rule for finding the coefficients of a given constituent;

> If that constituent involves x as a factor, change in the original function x into 1; but if it involves $1-x$ as a factor change in the original function x into 0. Apply the same rule with reference to the symbols y, z etc.; the final calculated value of the function thus transformed will be the coefficient sought.

That is, for every x, y etc. in a given constituent put 1 in the given function and for each of the contraries $(1-x)$, $(1-y)$ etc. in the constituent put 0 in the given function, calculate the result; this result will be the coefficient of the constituent. So with other constituents. Consider, for example, the function $1-x+xy$. The constituents of its expansion will be xy, $x(1-y)$, $(1-x)y$, $(1-x)(1-y)$. Take the first constituent, xy, first. Putting 1 for x and also 1 for y, in the given function, $1-x+xy$, we get $1-1+(1.1)=1$; 1, then, is the required coefficient of xy. Let us work out all the coefficients of the constituents of the expansion of $1-x+xy$ (read "$\longrightarrow$" as "the given function becomes equal to, and hence the required coefficient is").

xy: when $x=1$ and $y=1 \longrightarrow 1$; $x(1-y)$: when $x=1$ and $y=0 \longrightarrow 0$; $(1-x)y$: when $x=0$ and $y=1 \longrightarrow 1$; $(1-x)(1-y)$: when $x=0$ and $y=0 \longrightarrow 1$.

Putting these coefficients we have the full expansion of the given function in: $1(xy)+0x(1-y)+1(1-x)y+1(1-x)(1-y)$,

2.3. Introducing any Symbol to an Expression: A function may be expanded with reference to any symbol that it does not contain. Thus $(1-x)$ may be expanded with reference to x and y thus:

$$(1-x) = 0xy + 0x(1-y) + (1-x)y + (1-x)(1-y)$$

(the coefficient 1 is omitted, for $1.a = a$). The coefficients are obtained by putting 1 in the function for the x's that occur in the first and second constituent, and 0 for the $(1-x)$'s that occur in the third and fourth constituent. Similarly 1 may be expanded with respect to x thus:

$$1 = x + (1-x)$$

Again, with respect to x and y, 1 may be expanded in the following way:

$$1 = xy + x(1-y) + (1-x)y + (1-x)(1-y)$$

Note that the coefficients of the expansion of 1 are all 1.

The most important use of the law $x + (1-x) = 1$ is that it allows the introduction of any symbol to an expression which does not contain it. We know that

$$1 = x + (1-x) \qquad (a)$$

Now, for any class Y,

$$y = y.1 \qquad (b)$$

Putting $x + (1-x)$ for 1 in (b) we have

$$y = y\{x + (1-x)\}.$$

or

$$y = yx + y(1-x).$$

This may be regarded as the introduction of $x + (1-x)$ to y or the introduction of y to $x + (1-x)$. It is a consequence of the principle $x + (1-x) = 1$. For the universe being divisible between a class and its contrary, any class, say Y, may be said to elect its members from the two sub-divisions of the universe. Thus if x = man, y = mortals, then $y = yx + y\,(1-x)$ *i.e.*, mortals = mortals that are men and mortals that are not men. We may then say that for any class symbol y

$$y = yx + y\,(1-x)$$

Note that the above is not the expansion of $f\,(x,y)$ which is $f\,(1,1)\,xy + f\,(1,0)\,x\,(1-y) + f\,(0,1)\,(1-x)\,y + f\,(0,0)\,(1-x)\;(1-y)$. Again, $x+(1-x)$ and $xy + x\;(1-y) + (1-x)\,y + \;(1-x)\;(1-y)$ are the expansions of 1. Here the universe is defined in terms of x, and x and y respectively. But in $y = yx + y\,(1-x)$ a class Y is defined in terms of the sub-divisions of the universe divided dichotomously with reference to another class, X; that is, Y is defined in terms of X and its contrary.

2.4 Properties of Constituents: The following propositions summarise some important properties of constituents:

(*a*) Any single constituent, say, t satisfies the law of duality, *i.e.*, $t^2 = t$.

(*b*) The product of any two constituents t_1 and t_2 of an expansion is equal to 0.

(*c*) The sum of all the constituents of an expansion is equal to 1.

(*a′*): Every factor in a constituent is a logical symbol of the form x or $(1-x)$. Hence the square of each factor is equal to the factor itself. A constituent being the product of the factors the square of a constituent is equal to the constituent itself. Consider, the constituent xy for instance. $xy + xy = x^2\,y^2$. Now $x^2 = x$, $y^2 = y$. So $x^2\,y^2 = xy$. Using t to signify any constituent we have

$$t^2 = t \quad \text{or} \quad t\,(1-t) = 0.$$

From the above it follows that each constituent represents a class, for t satisfies the law of duality and whatever satisfies the law $x^2 = x$ is a class-symbol.

(b^1) : (*b*) follows from the law $x\;(1-x) = 0$. For in any constituent, t_1, of an expansion there will be at least one factor, say, x to which will correspond a factor $(1-x)$ in some other constituent, t_2, of the same expansion. Take, for instance, the constituents of the expansion of $f\;(x,y)$ viz, xy, $x\;(1-y)$, $(1-x)\;(1-x)\,y$, $(1-y)$. Multiply any two (any three, or all) of them and the result will be 0. In other words, the constituents of an expansion represent the exclusive divisions of the universe.

(*c′*): (*c*) follows from the fact that the expansion of $f\;(x)$, $f\;(x,y)$etc. may be regarded as the expansions of 1 with reference to x, x and y, etc. Thus $1 = x + \;(1-x)$, $1 = xy + x\;(1-y) \;+\; (1-x)\,y + (1-x)\,(1-y)$.

In other words, the constituents of an expansion represent the exhaustive divisions of the universe.

3. Interpretation of Expansion

So long we confined ourselves to the technique of expansion without caring to interpret the result. It is time we took up the question of interpretation of the results of expansion. Consider, for instance, the definition (A_2 proposition): all men are rational beings. Using x for "men" and y for "rational beings" the above proposition may be expressed as $x = y$, or $x - y = 0$. Expanding the first member of the equation we have $0xy + 1.x(1-y) + (-1)(1-x)y) + 0(1-x)(1-y)=0$. Now, what does this expansion mean? What meaning is to be assigned, for example, to $0xy$ in the above equation? This is our present problem—the problem of interpretation.

The logical equations that we shall meet in symbolical reasoning appear in the form

$$(1)\ V = 0 \qquad \text{and} \qquad (2)\ V = w$$

where V is any logical function involving logical symbols x, y, z etc. The form (1, is susceptible of easy interpretation. Its peculiarity that distinguishes it from (2) is that it is equated to 0 and the coefficients of the constituents of its expansion are either 0 or 1. (2) is more complicated, but it is far more important than (1). When expanded the coefficients of the constituents of (2) may take the form of fractions involving 1 or 0 as numerator and denominator, That is, in (2) the coefficients may take, besides 1 and 0, the values 0/0, 0/1, 1/0 and 1/1.

3.1 Interpretation of $V = 0$: Suppose, for simplicity, that V involves only two logical symbols, x and y. Suppose further that V represents the function $x-y$ of the previous example ("all men are rational beings") and we have the equation $x-y = 0$. Expanding the first member we have

$$0xy + x(1-y) - (1-x)y + 0(1-x)(1-y) = 0$$

$$\text{or}\quad 0xy + x(1-y) + (1-x)y + 0(1-x)(1-y) = 0 \qquad (3'.1)$$

(we have obtained the second equation by changing $-(1-x)y$ to $(1-x)y$. This change is permitted by the principle of duality. Thus, $x^2 = x$; so squaring $-x$ we have $+x^2$ or x).

Now, the sum of the four terms (*all positive*) that involves only logical symbols is 0: so each of them must be equal to 0. Consider, for instance, the second term $x(1-y)$ or $1.x(1-y)$. Noting that $1.a$ is 0 if and only if a is 0 it may be deduced from the above equation that

$$x(1-y) = 0$$

Similarly with $1.(1-x)y$. It follows, that is, from the third term that

$$(1-x)y = 0$$

The interpretation of the equations are, respectively:
the class signified by "men who are not rational" does not exist,

the class signified by "rational beings who are not men" does not exist. Consider now the terms $0\,xy$ and $0(1-x)(1-y)$. Each of them is equal to 0, for the sum of all the four terms is equal to 0. But from $0\,xy = 0$, for example, the value of xy cannot be determined, for anything multiplied by 0 is 0. Thus, in $0\,xy = 0$ put any value you like for x and y and the equation will be satisfied. So we find that

> when $V = 0$ is expanded the constituents whose coefficients are 0 cannot be given any determinate interpretation. But the constituents whose coefficients are 1 are interpretable.

These latter constituents are to be severally equated to 0. The collection of the interpretation of such constituents constitute the interpretation, and is equivalent to, the equation $V = 0$. This may be put in the form of a practical rule:

> Expand the function V and equate to 0 every constituent whose coefficient is 1. The interpretation of these results constitute the interpretation of, and is equivalent to, the given equation.

Thus by expanding the first member of the above mentioned equation $x-y=0$ and by rejecting the terms whose coefficients are 0 we have

$$x(1-y)+y(1-x) = 0 \qquad \text{(A)}$$

Equating each of the terms in the first member to 0 and aggregating the results we have

$$\text{A1}: x(1-y) = 0 \quad \text{and} \quad \text{A2}: y(1-x) = 0$$

which mean respectively, as we have seen, the denial of the class "man who are not rational" and that of the class "rational beings that are not men". Putting these interpretations in the form of propositions of the four-fold scheme of traditional logic we have:

A1*a*: No men are not-rational (E),
A2*a*: No rational beings are not-men (E).

We know that according to the symbolism of the Boolean logic $x(1-y) = 0$ is the symbolic representation of "all x are y" Hence A1 and A2 may be translated also as

A1*b*: All men are rational beings (A),
A2*b*: All rational beings are men (A).

In traditional logic A1*b* and A2*b* are derived respectively from A1*a* and A2*a* by obversion or double negation.

We have illustrated the form $V = 0$. Let us further illustrate it by a more complex case—in which V involves three symbols, say, x, y, z. Consider the definition

> "clean beasts are those which both divide the hoof and chew the cud".

Let x = clean beasts, y = beasts that divide the hoof, and z = beasts that chew the cud. The given definition may be expressed by the equation

$$x = yz$$

Putting it in the form V = 0 we have

$$x-yz=0.$$

Expanding the first member of this equation we have

$$0xyz+xy(1-z)+x(1-y)z+x(1-y)\ (1-z)-(1-x)yz+(1-x)\ y(1-z)$$
$$+0(1-x)\ (1-y)z+0(1-x)\ (1-y)\ (1-z)$$

Severally equating to 0 each of the constituents whose coefficients are 1, we have

$$(1)\ xy\ (1-z)=0,\quad (2)\ x(1-y)z=0,\quad (3)\ x(1-y)\ (1-z)=0,$$
$$(4)\ (1-x)yz=0$$

Translated in ordinary language these equations will be seen to express the denial of the following classes:

(1) beasts which are clean and divide the hoof but do not chew the cud,

(2) beasts which are clean and chew the cud but do not divide the hoof,

(3) beasts which are clean and neither divide the hoof nor chew the cud,

(4) beasts which are not clean and divide the hoof and chew the cud.

The above denials are implied by the given difinition, and conversely, these denials together imply the above definition.

We know that the number of terms in the expansion of a function of n number of symbols is 2^n. Now it will be noticed that of the terms of the expansion of an equation of the form V = 0 exactly one half is, while the other half is not, interpretable. That is to say, the terms that are interpretable will be just half of 2^n, and half 2^n is obviously 2^{n-1}. We may, then, say that

> the number of interpretable terms in the expansion of V = 0 is 2^{n-1} where n is the number of symbols involved in V.

3.2. Interpretation of V = w

An equation of this form in which w is a class symbol and V a function involving other symbols is obviously reducible to the form V = 0. But it is sometimes necessary to retain a given equation in the form V = w, or w = V (in which form it usually appears) where a given function is equated to w (and not to 0). Consider, for instance, the equation $x=yz$ of the previous evample (the definition of clean beasts). This may certainly be put in the form $x-yz=0$. But suppose from the equation $x=yz$ we want to determine the relation in which z stands to x and y. We are required, that is, to determine the value of z in terms of x and y. Now, from the equation $x=yz$ we have the value of z as

$$z=\frac{x}{y}$$

This equation is of the form w = V, $\frac{x}{y}$ corresponding to V. But the value of z viz. x/y is not immediately interpretable.

Expanding x/y we get

$$z = (1/1)\,xy + (1/0)\,x\,(1-y) + (0/1)\,(1-x)\,y + (0/0)\,(1-x)\,(1-y)$$

or, noting that $1/1 = 1$ and $0/1 = 0$ we have

$$z = xy + (1/0)\,x\,(1-y) + 0\,(1-x)\,y + (0/0)\,(1-x)\,(1-y)$$

But what does the above expansion mean? We shall presently enquire into the interpretations of expansion like the one mentioned above. The peculiarity of the above expansion is that to some of its constituents are affixed the coefficients 1/0 and 0/0. To interpret the expansion like the above is, then, to interpret the significance of coefficients like 1/0 and 0/0. Now the possible coefficients that might arise in the expansion of equations of w = V form are 1,0, 1/1, 1/0 0/1 and 0/0. Sometimes there arise in any expansion also coefficients like 1/2. Since $1/1 = 1$, and $0/1 = 0$, we may ignore 1/1 and 0/1 as possible coefficients. We have then, as possible coefficients: 1,0, 1/0, 0/0, 1/2 etc. It will be found convenient to classify the possible coefficients under four heads viz.:

(*a*) 1, (*b*) 0, (*c*) 0/0 and

(*d*) any other coefficient that like 1/0, 1/2 etc. does not come under any one of the other three classes.

We shall take these cases one by one. We already know how to interpret the first two cases. We shall, however, repeat, for the sake of completeness, what is already stated about (*a*) and (*b*) We shall renumber (*c*) and (*d*) as 3.21 and 3.22 respectively.

(*a*). 1: The coefficient 1 is the symbol of the universe. It indicates that the whole of the class to whose expression it is attached must be taken without limitation.

(*b*) 0: It is the symbol of the null class. It indicates that no part of the class to whose expression it is attached must be taken.

3.21 0/0: In arithmetic 0/0 represents an indefinite number. On the analogy between arithmetic and the algebra of logic we propose to interpret 0/0 as the symbol of indefinite class. In support of the above proposal it may be said that the interpretation suggested is found to hold true in fact. We have found no cases in which the above interpretation is not correctly applicable.

As an illustration consider the proposition "men who are not mortal do not exist" (which means, in other words, all men are mortal); this is a description of men. Suppose we want a description of mortal beings in terms of men. Let x = mortal beings, y = men. Then the given example will be expressed by the equation.

$$y\,(1-x) = 0$$

from this equation we are required to find out the value of x (in terms of y). We obtain from the above equation

$$y - yx = 0$$

or, $$yx = y$$

According to the rule of ordinary algebra x is here 1; we get it by dividing both sides of the equation by y. But the operation of division is not, in such cases, allowed in the algebra of logic. We may, however, *express* the operation as $x = y/y$ without actually *performing* the operation. Now, expanding the second member of the equation $x = y/y$ we have

$$x = y + 0/0\ (1-y)$$

The above equation means that the class mortal consists of all men and an indefinite portion of the class signified by "not-men". But what does "an indinite portion" (indicated by 0/0) of not-men mean? There are in this case, three possibilites viz.:

3.211 all: $0/0\ (1-y)$ may mean all not-men (this holds if everything is mortal).

3.212 some: $0/0\ (1-y)$ may mean some, but not all, not-men (this would hold if immortal beings existed).

3.213 none: $0/0\ (1-y)$ may mean no being who is not a man (this would hold if all and only men were mortal).

But whether 0/0 is used to mean *all* or *some* or *no* the truth of the given proposition remains unaffected. The given proposition is "all men are mortal". From this proposition alone we cannot say definitely whether all mortals are men or there are mortals who are not men.

> 0/0, then, indicates that all, some or no member of the class represented by the constituent to which it is attached must be taken. It is an indefinite class-symbol and is to be replaced, let us agree, by v.

3.22 Coefficients other than the Previous Cases, 1/0, 1/2 etc.: Of the possible coefficients only 0 and 1 satisfy, we know, the law of duality, $x^2 = x$. 0/0 does not necessarily disobey the law of duality, for it admits of the numerical values 0 and 1 indifferently. But the question whether 0/0 satisfies the law of duality or not is not here relevant, for the interpretation of 0/0 that we have suggested is independent of this question; the interpretation is, Boole points out, "established experimentally". All other coefficients may be brought under the class—

Coefficients which do not Satisfy the Law of Duality:

About the interpretation of such coefficients, rather constituents to which such coefficients are affixed, it may be laid down as a rule that

> any constituent whose coefficient is not subject to the law of duality must be separately equated to 0.

Note that it is the *constituent*, not the coeffiecient, that is to be equated to 0, and that such constituents are to be *severally* equated to 0.

3.221 Direct Conclusion and Independent Relations: Suppose by expanding an equation of the form $w = \mathrm{V}$ we get the expansion of the form:

$$w = \mathrm{A} + 0\mathrm{B} + 0/0\,\mathrm{C} + 1/0\,\mathrm{D} + 1/2\,\mathrm{E}$$

in which A, B etc. are used to represent constituents. From the above equation we have $w = A + vC$ (the whole of A and nothing of B is taken, according to (*a*) and (*b*) discussed above; 0/0 is interpreted as an indefinite class symbol v (some, all, none) according to 3.21). But what about the fourth and fifth term of the above expansion? According to the rule laid down under 3.22 the constituents D and E are to be separately equated to 0. That is, D = 0 and E = 0. So from the expansion

$$w = A + 0B + 0/0\,C + 1/0\,D + 1/2\,E$$

we obtain the following interpretable equations:

$$(i)\ W = A + vC,$$

$$(ii)\ D = 0, \qquad (iii)\ E = 0.$$

Equation (*i*) represents what the above expansion *directly* implies, what Boole calls "the direct conclusion" of $w = V$. Equations like (*ii*) and (*iii*)—arrived at by equating to 0 the constituents whose coefficients do not satisfy the law of duality—represent what Boole calls "independent relations"—relations not directly sought. We wanted to determine the value of w in the above symbolic example. But we have, in the process of expansion, arrived at relations that exist among the elements of the given equation in perfect independence of w.

3.2211 Illustration: Consider, for instance, the following definition of responsible beings:

Responsible beings are all rational beings who are either free to act or have voluntarily sacrificed their freedom.

Let x = responsible beings, y = rational beings, z = beings who are free to act w = beings who have voluntarily sacrificed their freedom of action. We shall suppose that in the above definition "or" is used in the exclusive sense. The representation of the above proposition will, then, be

$$x = yz(1-yw) + yw\ (1-yz)$$

But if we remember that + is used in the exclusive sense *i.e.*, if we take care not to bring in the inclusive sense of + in the final interpretation the above definition may more simply be expressed in the form

$$x = yz + yw.$$

Let it be required to determine, from the above equation, the value of y in terms of x, z etc. From the given equation we have

$$y = x/(z \div w)$$

Expanding the second member we get

$$y = (1/2)xzw + xz\ (1-w) + x\ (1-z)w + (1/0)x\ (1-z)(1-w) + 0\ (1-x)wz + 0\ (1-x)z\ (1w) + 0\ (1-x)\ (1-z)w + 0/0(1-x)\ (1-z)\ (1-w).$$

Rejecting the terms whose coefficients are 0 we have $y = (1/2)\,xzw + xz\ (1-w) + x(1-z)\,w + (1/0)x\ (1-z)\ (1-w) + (0/0)(1-x)\ (1-z)\ (1-w)$. Now, separating, and separately equating to 0, the constituents whose coefficients are 1/2 and 1/0 we obtain

Direct Conclusion: $y = xz(1-w) + x(1-z)w + v(1-x)(1-z)(1-w)$ (DC)
First Independent Relation: $xzw = 0$ (IR.1)
Second Independent Relation: $x(1-z)(1-w) = 0$ (IR.2)

By interpreting the above equations we have

DC: Rational beings are all responsible being who are either free to act not having voluntarily sacrificed their freedom, or not free to act, having voluntarily sacrificed their freedom, together with an indefinite remainder (some, none or all) of beings not responsible, not free and not having voluntarily sacrificed their freedom.

IR.1: No responsible beings are at the same time free to act, and in the condition of having voluntarily sacrificed their freedom.

IR.2: No responsible beings are not free to act, and in the condition of not having sacrificed their feedom.

IR.1: and IR.2 may be put in other more convenint forms thus.

From I.R1, $xzw = 0$, we obtain

$$xw = 0/z$$

Expanding the second member of the equation we get

$$xw = 0z + (0/0)(1-z) \qquad \text{(note that } 0/1 = 0)$$

or, $$xw = v(1-z) \qquad \text{(IR.11)}$$

Similarly, from IR.2, $x(1-z)(1-w) = 0$, we have

$$x(1-w) = 0/(1-z)$$

Expanding the second member of this equation we get

$$x(1-w) = (0/0)z + 0(1-z)$$

or, $$x(1-w) = vz \qquad \text{(IR,21)}$$

The interpretation of (IR.11) and (IR.21) are respectively:

IR.11 Responsible beings who have voluntarily sacrificed their freedom are (some beings who are) not free.

IR.21 Responsible beings who have not voluntarily sacrificed their freedom are (some beings who are) free.

3.3 Rules of Interpretation: Summary

It will be convenient for reference to put together Boole's instructions for interpretation. We shall call them Reference Rules (RR).

RR.1 The symbol 1, as the coefficient of a term in an expansion, indicates that the whole of the class which that constituent represents, is to be taken.

RR.2 The coefficient 0 indicates that none of the class are to taken.

RR.3 The symbol 0/0 indicates that a perfectly indefinite portion of the class, *i.e.*, *some*, *none* or *all* of its members are to be taken.

RR.4 Any other symbol as a coefficient indicates that the constituent to which it is prefixed must be equated to 0.*

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* These rules like some other definitions and interpretations used in this paper are are in Boole's own words. I have not burdened with quotes the paper that is already heavy with symbols.

3.4 It will be noticed that the propositions by which we have illustrated the Boolean method of analysis of primary propositions are all of the from A_2 *i.e.*, definitions, in which both the S and P are taken in entire extension, in which, that is, S=P, or of the form E in which too S are P are taken in their full extension. We have not illustrated the analysis A_1 (and I) propositions. In A_1 an indefinite portion of the P is taken, *i.e.*, A_1 is of the type $x=vy$. How to analyse such A propositions? The analysis of such propositions is facilitated if the symbol v is eliminated. And it is not difficult to eliminate v (and to represent A_1 in the form of E). We have already illustrated such analysis. Consider, for example, the proposition already mentioned: men who are not mortal do not exist. This proposition may be said to mean *either* no men are immortal (E) *or* all men are mortal (A). Propositions of the form "all x are y" may be rewritten in the equivalent form "no x are not-y" or "x that are not-y do not exist". So, "all x are y"($x=vy$) which may be rewritten in the form $x(1-y)=0$ in which v does not occur. Now $x(1-y)=0$ may be subjected to analysis according to the method discussed in this paper. The equivalence of $x=vy$ and $x(1-y)=0$ is intuitively obvious. But such equivalence and hence the elimination of the symbol v from an equation, may be justified by the *Boolean method of elimination* which should, considering its immense importance, form the subject matter of a separate paper. When we shall be acquainted with the method of elimination we shall find ourselves in a better position to deal with all kinds of primary propositions.

TANSEN—THE INDIAN ORPHEUS

VAMAN H. PANDIT

Tansen was the best singer that India has ever seen. He was one of the nine jewels that added beauty to the magnificient court of Emperor Akbar, who was a patron of art and literature. He was contemporary of Queen Elizabeth of England.

Tansen was a matchless singer. He lived during the second half of the sixteenth century at Rewa, Agra, Delhi and Gwalior respectively. It was said of him that when he sang, the musical instruments kept before him, played of their own accord. He was first in love with Lord Krishna ; First in love with his holy Master—Shri Haridas Swami and he was first in love with his beloved too. But though he became so great, he was very kind and gentle by nature and was always ready to help others by his melodious voice.

Akbar the Great loved him very much. Both of them were most familiar friends and of the delighted His Majesty with his wonderful songs. Tansen was the pioneer of many a style of classical sangeet. He is still well known as an author of 'Mishra Malhar' and 'Darbari Kanada' and no one sang 'Dhrupad' as he sang in those days.

A story is told about him that he cured the Emperor's daughter by his silvery music. The story which I am going to tell is a true story. It is not a myth or legend for India did possess such mighty singers like Tansen. He is aptly called the Orpheus of Bharat.

In the month of March, the Emperor's daughter fell ill. Akbar loved his daughter like anything. She expressed her desire that she wants to listen the 'deep raag.' The peculiarity of this style of song is that when it is sung the extinguished lamps are lighted again but the man who sings in such a style his heart burns and aches terribly and no medicine is able to cure it on earth save an antidote of a particular style of song named 'malhar' which goes to counteract its dreadful effects. . . . . . . When this 'malhar' raag is sung, it rains and this rain water cools the heart of the singer and he becomes hale and hearty.

When Tansen heard that the Emperor's daughter wants to listen to this 'raag' he said, "Well I am ready to sing." He was gentle of heart and wished that the daughter of the King should be cured. A day was fixed when Tansen was to sing this 'deep raag. On that day before a large gathering of persons and courtiers and the Emperor, the noted singer came in the 'Darbar Hall' or the Hall of Public Audience to give the recital of his classical song.

Tansen came to the court that day in a very simple dress. He wore a Rajputi tarban, a long white coat. He had a chandan mark on his forehead in a perfect Hindu style like a devout Hindu. He was followed by his accompanists or the men of his orchestra.

Bowing low to the Emperor, he began his performance with a 'bina' before him. As is the usual custom, he began with the 'Mangala Charan'—a kind of epilogue. Then he said a couplet in praise of his preceptor. After a pause of a minute or two, he praised the Emperor Akbar—his master and then with a low bow to the King he began his well known song in 'deep raag' style.

Within a short time the Hall became spell bound. It was a most magical vocal performance of Tansen. He presented a unique alaap with ascent and descent in many a taals with harmonious blendings in a fairly sweet silvery voice which was throughout in evidence and lo! What was the impression when he commenced with his intricate taans with unimaginable depth, the lights in the hall became brighter to the amazement of all.

That night, it is said, by no less a person than His Majesty, that never before did he listen to such a marvellous vocal song. The ministers and courtiers too lauded the singer, all, all were bewitched and dumb struck.

Yet another taan he threw and the lights outside the hall and the lamps on the street began lighting one by one and still brighter dazzled the lights in the hall and when he ultimately reached the climax with the last taan, the lights everywhere in the city were lighted brimful. From far and wide, the people began to wonder and look at the 'milky way' brought on earth by Tansen. O, it was a veritable 'dewali,' nay even more than that.

The Princess—the daughter of the Emperor—forgot her ailment. She instantly became alright with this song treatment of 'deepraag.' She looked cheerful. She came down in person from the ladies gallery to thank Tansen and offered her hand with millions of thanks.

But alas! Tansen was not in a mood to accept the hand of the Princess. "You have driven death from my heart," she said, "how can I ever repay you." "But you have repaid me," said Tansen in a faltering voice, "I first sang in praise of my Lord and Guru and they have cured you. Divine Bliss is like a great guiding light. It is the highest and the greatest Lighthouse on earth. And Lord said, 'let there be light and there was light' and so all the lamps were lighted. It is this Bliss that gladdens the heart of a singer."

Now the heart of the noted singer began to ache and burn inside. He felt extremely thirsty—thirsty not for water—but thirsty that some one should come and sing a song in 'malhar' style, so that his heart might be cooled and restored to normal.

Akbar noticed his ailment and understood what he meant for he was also deep in 'sangeet.' He called his courtiers and ordered them to summon some one who would sing in 'malhar raag.' This type of raag is an antidote to quench the thirst which is felt by singing 'deepraag.'

On stepped a beautiful maiden who was watching the wonderful vocal performance given by Tansen. She made a low bow to the Emperor and said, "I will show your Majesty the power of 'malhar' raag. You have heard 'deep' raag, now listen to 'malhar raag.'

"Sing, sing sweet little girl, be quick, lose no time," said the Emperor, "I value the life of Tansen more than my Empire."

"Listen, then, Your Imperial Majesty."

The young woman began with a melodious alaap and sent a reverberating 'taan' at the sky. No sooner she sang than the clouds began to hover and it thundered with lightning. The scene changed. Rain bearing wind began to blow cool. It drizzled. It rained. It turned into a heavy downpour and the streams rolled to join the brimming rivers.

By and by Tansen listened to the sweet music and came to himself. The sweet maiden that day saved the life of Tansen. Tansen saved the life of a woman and a woman too saved his life.

He got up from his seat and then and there embraced the sweet woman forever. Both of them came outside the palace to watch the torrential rain and there came floating nearest their feet on the current of the water a bunch of sweet 'forget-me-nots' that glow for happy lovers.

His Majesty without whiling away a single minute understood the wish of Tansen and got them united under the wedding bower of his benovolent eyes.

In the end Tansen took leave of the Emperor and hastened to Gwalior to enjoy his honeymoon. For long he lived at Gwalior with his beloved and both of them delighted the people with their songs.

Since then, we are proud that the city of Gwalior has maintained this tradition of classical 'sangeet.' Stands still there a monument where the last remains of the greatest singer the world has seen lie entombed and people come there from far distance to pay their homage to the noted singer Tansen. But when I went there, I was fortunate enough, to listen to his song which whistled with the wind.

MAN AND WOMAN

RUBY ZAGOREN

Linked by marriage of earth and sky,
Mixed by clay and thirst for water,
He the son and she, the daughter.

Mated by the flesh and spirit,
Locked by might and lust for fire,
Branded by star-high desire—

Reaped and winnowed, threshed and sheaved,
Cured by sun for strong and long,
One the singer, one the song.

Welded by the sign and token,
Crossed by visions, torn by dreams,
He what is and she what seems.

APPENDIX

ANNUAL REPORT OF THE ACTIVITIES

OF THE

ISWARCHANDRA PATHABHAVAN (DAY STUDENTS' HOME) FOR THE YEAR 1958-1959.

The Iswarchandra Pathabhavan (Day Students' Home) begs to submit the following report on the state of the Pathabhavan's affairs during the academic year ending 31st May, 1959.

During the year 611 students were admitted, the existing total number on the roll being 1193 on 31st May, 1959.

During the year the average attendance per day was 367. The highest on any day was 450 and the lowest 175. When 1st year and 3rd year students were absent the daily attendance averaged 246 (March, April and May, 1959).

356 student members appeared in the 1959 B.A., B.Sc., B.Com. Examinations and 202 in the Intermediate Examinations (See Annexure 'A').

Attendance and discipline have shown continuous improvement. Observation shows that 30% of the members are very studious averaging about 6 hours of study daily at the Pathabhavan, 55% are fairly studious with about 3½ hours a day. In the case of quite a number, study time at the Pathabhavan is shortened due to the exigencies of their College routines.

The student members of the Home have shown very satisfactory results, in the University I.A , I.Sc., I.Com. Examinations of 1959. Altogether 202 students appeared out of whom information was available from 81. Among them 70.6% had passed, 29.4% were unsuccessful, 16% did not appear. A most encouraging thing is that, 5 students who had been placed in the 2nd Division in their School Final Examinations passed their Intermediate Examination in the 1st Division and 1 and 4 who had passed the School Final Examination in the 3rd Division were placed in the 1st Division and 2nd. Division respectively in the Intermediate Examinations (See Annexure 'B').

Similar improvement was also noticed in the case of those appearing at the B.A., B.Sc. and B.Com. Examinations of 1959. Altogether 356 students appeared out of whom information was available from 108. Among them 50% had passed with Honours, 5% had passed with Distinction, 15% in Pass Course, 22% were unsuccessful and 7.4% did not appear. It is encouraging to note that a number of Pass Course students who had passed the Intermediate Examination in 3rd and 2nd. Divisions secured Honours and Distinction (See Annexure 'C').

The Pathabhavan is open to student members from 8 a.m. to 8 p.m. on week days and from 12 noon to 7 p.m. on Saturdays. The Pathabhavan is closed on Sundays. The total number of holidays observed during this year was 24 days. The Pathabhavan is kept open during the Summer and Puja Vacations.

On the last day of stock taking (31st March, 1959) the Library had 5121 books. Since then and upto the date of this report, 398 books have been added. The Pathabhavan possessed one 16 mm. sound cine projector, and educational films are shown once a week The grateful thanks of the Managing Committee are due to the Film Division, Government of India, British Information Services and United States Information Services, for films received from them on loan without any charge whatsoever. A list of films which were found to have interested the students most, is given in Annexure 'E.'

Apart from lending films the United States Information Services has made several gifts of books to the Pathabhavan. Under a special programme, the British Information Services has been giving to the Pathabhavan journals at regular intervals. The Pathabhavan was visited by the Vice-Consul of Japan, who also presented some books. The Pathabhavan was grateful for all.

On an average, four books were issued to the student at a time. During the year the total number of books issued was 2,75,661 ; text books 2,61,878 and reference books and magazines 13,783. It has been found that members are gradually becoming more and more inclined towards studying Encyclopaedias and using Dictionaries. Books lost or missing during the year numbered 64 (1.25% of total stock) valued at cost price of Rs. 421-18 (0.07% of the total value of stock).

There is provision in the Pathabhavan—Canteen for supply of full meals as well as tiffins. The actual cost of each meal or tiffin is 37 naye Paise. A student member is entitled to either of the two at a subsidized rate of 12 naye Paise, 25 naye Paise being received from the Government as subsidy. If any student wants to take both meal and tiffin, he can have one at the subsidized rate and the other at cost. At present the Canteen cannot accomodate more than 30 members at a time. On an average, about 300 students take advantage of the Canteen facilities daily. There are facitities also for students for taking bath which are freely used.

The Pathabhavan is grateful to "Committee of Relief and Gift Supplies, Calcutta Ports," 37/B Dharmatolla Street, Calcutta—13 for free supply of powdered milk and cheese.

STAFF

During the year the Pathabhavan Library had a staff of 5 Assistants. Two more attendants have since been added to help them.

The Canteen has 6 Assistants while the General Office is manned by 7 members including the Warden and Assistant Warden. The Subordinate Staff (Gate Keeper, Sweeper and Mali) consists of 4 members.

(Details of salaries of Employees in Appendix—I)

A copy of the audited accounts which has been submitted to the Government is attached hereto along with a statistical assesment of the working of the Pathabhavan.

The Managing Committee of the Pathabhavan held nine meetings during the year.

For Iswarchandra Pathabhavan,
(Day Students' Home),
Kanailal Sarkar.
Jt. Secretary.

Certified True Copy.
For Iswarchandra Pathabhavan,
(Day Students' Home),
T. C. Bagchi,
Assistant Secretary.

ANNEXURE 'E'

LIST OF THE FILMS.

1. The Beginning of History.
2. Approach to Science.
3. Debate Continues.
4. Nevada and its Natural Resources.
5. Story of Alva Edision.
6. Know your Library.
7. As Old as the Hills.
8. Atoms at work.
9. Forward a Century.
10. The King's Life Guard.
11. Atom and Industry.
12. Borax.
13. Trainingmen for the Atomic Age.
14. Our Times.
15. Electro-magnetic Induction.
16. East African College.
17. Every drop to Drink.
18. Education for Living.
19. Khajurao.
20. Story of Light.
21. Our Times Series No. 27.
22. Store House of History—The U. S. National Archives.
23. How the Telephone Works.
24. The Development of a Rabbit.
25. Royal Destiny.
26. The Coronation Day.
27. Kerala.
28. Call of the Mountain.
29. Youth of Activities.
30. Antertic Whale Hunt.
31. Oxford.
32. U. K. Prime Ministers in India.
33. Twilight Forest.
34. Story of Printing.
35. Speed the Plough.
36. Children on Trial.
37. Mirror in the Sky.
38. Youth in Britain.
39. We Found a Valley.
40. Etawah Story.
41. Family of Man.
42. Prime Minister Nehru visits President Eishenhour.
43. Konarak.

ANNEXURE 'A'

1.	Number of student members of 1957-1958	582
2.	Number of enrolment in 1958-1959	611
	Existing Total No.	1193

3. Number of student members appeared at the Degree Examinations:

B.Sc.	...	180
B.A.	...	113
B.Com.	...	63
Total	...	356

4.	Number of student members appeared at the Intermediate Examination	202
5.	Card Issued not taken (1958-1959)...	15
6.	Transferred to Shri Ramkrishna Day Students' Home	1
7.	Eliminated for irregular attendance	189
8.	Expelled	5
	Total	768
9.	Number of student members brought forward to this year	425
	Total	1193

ANNEXURE 'B'

RESULT OF INTERMEDIATE EXAMINATIONS IN ARTS, SCIENCE AND COMMERCE HELD IN 1959.

A.	Total number of student members appeared ...	202
B.	Information available from	81
C.	Number of student members did not appear from the above information	13
D.	Total percentage did not appear	16%
E.	Total percentage passed	70.6%
F.	Total percentage Compartmental allowed	nil.
G.	Total percentage failed	29.4%

H. As per information students appeared—68 out of which:

	No.	% age
First Division ...	12	17.6
Second Division ...	25	36.8
Third Division ...	11	16.2
Compartmental ...	X	X
Failed	20	28.4
Total	68	100.0%

ANNEXURE 'D'

A. *I.A., I.Sc., I.Com.*

	No.	Past Result	Present Result
S. F.	1	III Division	I Division.
S. F.	5	II Division	I Division.
S. F.	4	III Division	II Division.

B. *B.A., B.Sc., B.Com.*

Intermediate	1	III Division	Hons. II Class.
Intermediate	3	II Division	Hons. II Class.
Intermediate	1	II Division	Distinction.

ANNEXURE 'C'

RESULT OF DEGREE EXAMINATION IN ARTS, SCIENCE AND COMMERCE HELD IN 1959.

A.	Total number of student members appeared ...	356
B.	Information available from	108
C.	Number of student members did not appear from the above information	8
D.	Total percentage did not appear	7.4%
E.	Total percentage passed	70%
F.	Total percentage Compartmental allowed	8%
G.	Total percentage failed	22%

H. As per information number of student members appeared—100 out of which:

	No.	% age
Honours II Class ...	50	50%
Distinction ...	5	5%
Pass Course ...	15	15%
Compartmental ...	8	8%
Failed	22	22%
Total	100	100%

APPENDIX I.

STAFF SALARY.

Sl. No.	Name,	Designation.	Amount Rs.
1.	Shree Tarunchandra Bagchi, M.Sc.	Warden.	400/- p.m.
2.	Shree Jitendranath Saha, M.A.	Assistant Warden.	200/-
3.	Shree Bijoykumar Prodhan	Library Assistant.	100/-
4.	Shree Santoshchandra Podder	Accountant.	75/-

Sl. No.	Name,	Designation.	Amount Rs.
5.	Shree Dilipkumar Ganguli.	Lending Assistant.	65/- p.m.
6.	Shree Kalyankumar Bose.	Lending Assistant.	65/-
7.	Shree Pathik Chakrabarty.	Lending Assistant.	65/-
8.	Shree Kalidas Ghosh.	Lending Assistant.	65/-
9.	Shree Bhabanipada Chakrabarty.	Library Attendant.	60/-
10.	Shree Ratikanto Maji	Peon.	60/-
11.	Shree Bidhubhushan Chakrabarty.	Reception Attendant.	50/-
12.	Shree Sushilkumar Banerjee.	Reception Attendant.	50/-
13.	Shree Pramodranjan Das.	Clerk-Cum-Typist	60/-
14.	Mrs. Nanibala Sen Gupta.	Canteen Supervisor.	125/-
15.	Mrs. Parulprova Majumder.	Canteen Attendant.	75/-
16.	Mrs. Labanyabala Pal	Canteen Maid.	30/-
17.	Mrs. Annapurna Chanda	Canteen Maid.	30/-
18.	Shree Nabin Naik.	Canteen Servant.	50/-
19.	Shree Shivaprosad Parida.	Canteen Boy.	20/-
20.	Shree Kishorilal Misra.	Durwah (Gate Keeper).	70/-
21.	Shree Shridhar Bhui.	Mali.	60/-
22.	Shree Tanayendranath Dutta.	Peon.	40/-
23.	Shree Bhudhan Muchi.	Sweeper.	50/-
24.	Shree Govind Dosad.	Sweeper.	50/-
	Total		1915/-

ISWARCHANDRA PATHABHAVAN (DAY STUDENTS' HOME) RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST, MARCH, 1959.

Receipts.			Payments.	
Opening Balance :			*Non-Recurring :*	
With State Bank			Furniture & Fixtures a/c ...	Rs. 1,204-18
of India ...	Rs. 55,205-37		Library Books purchased ...	Rs. 13,483-83
Cash in Hand...	Rs. 663-93		Miscellaneous purchased ...	Rs. 118-83
			Library Equipment a/c. ...	Rs. 4,598-50
		Rs. 55,869-30	Cine Projector a/c, ...	Rs. 5,686-18
Government Grant (Recurring) :			Office Equipment a/c. ...	Rs. 412-36
For Corpn. Tax	Rs, 2,443-48		Canteen utensils & crockeries	Rs. 81-37
(1957-58, about six months.)			Fire Extinguisher	Rs. 276-00
For Contingency	Rs. 7,260-00		Canteen Equipment ...	Rs. 38-99
For Staff Salary				
(for 6 months)	Rs. 12,270-00		*Recurring :*	
For Canteen (for			Staff Salary a/c.	Rs. 23,744-87
six months)...	Rs. 18,750-00		Stationery a/c.	Rs. 109-57
For Stationery,			Postage a/c.	Rs. 88-21
Office expense, etc.			Conveyance & carriages ...	Rs. 102-22
(for 6 months)	Rs. 200-00		Printing a/c, ...	Rs. 988-13
Electric Charges,			Miscellaneous expenses ...	Rs. 249-35
Telephones, etc.			Electricity a/c.	Rs 2,871-94
(for 6 months)	Rs. 1,500-00		Expense against Grant to	
			Canteen	Rs 19,179-06
		Rs. 42,423-48	Maintenance of Home a/c. ...	Rs. 63-83

Misc. Receipts Account :			Liverics a/c.		Rs. 75-
Canteen Collection			Binding of Library Books a/c.		Rs. 1,332-
'Students' ...	Rs. 6,464-02		Repair of Canteen crockerics and utensils		Rs. 31-
Other accounts	Rs. 36-75		Repair of Furniture a/c. ...		Rs. 27-
		Rs. 6,500-77	Telephone...		Rs. 230-
			Higginbothams Private Ltd. (Advance payment for purchasing books)		Rs 2,014
			Auditor's fee		Rs. 300-
			First Aid		Rs. 5-
			Maintenance of Typewriter...		Rs. 6-
			Insecticides		Rs. 41-
			Education Directorate (for Corpn. Tax 1958-59) ...		Rs. 4,121-
			Bank Charges		Rs. 0-
			G. N. Sanyal		Rs. 29-
			Closing Balance :		
			With State Bank of India (C.A.)	Rs. 22,916-86	
			Cash in Hand ...	Rs. 363-97	
					Rs. 23,[illegible]80-
		Rs. 104,793-55			Rs. 104,793-

Subject to my separate report of even date, I certify the above accounts as correct.

M.K. Deb,
Chartered Accountant.

ISWARCHANDRA PATHABHAVAN (DAY STUDENTS' HOME) INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED

31ST MARCH, 1959.

Expenditure		Income		
Staff Salary a/c.	Rs. 23,744-87	*Government Grant Recurring* :		
Stationery a/c.	Rs. 109-57			
Postage a/c.	Rs. 88-21	Grant for Corporation		
Conveyance a/c.	Rs. 102-22	Tax (1957-58)	Rs. 2,443-48	
Printing a/c.	Rs. 988-13	Contingency a/c.	Rs 7,260-00	
Misc. Expenses a/c. ...	Rs. 249-35	Staff Salary a/c.	Rs. 12,270-00	
Electricity Charges a/c. ...	Rs. 2,871-94	Grant for Canteen	Rs. 18,750-00	
Expense against grant to Canteen a/c.	Rs. 19,179-06	Salary, office expense, etc.	Rs. 200-00	
Maintenance of Home a/c. ...	Rs. 63-83	Electricity,		
Liveries a/c.	Rs. 75-62	Telephone, etc. ...	Rs. 1,500-00	
Binding of Library Books a/c.	Rs. 1,332-35			
Repair of utensils and				Rs. 42,423-
crockeries a/c.	Rs. 31-62	*Misc. Receipt A/c.* :		
Repair of Furniture and		Canteen Collection 'Students'		Rs. 6,464-
Fixtures a/c.	Rs. 27-00	Other accounts		Rs. 36-
Bank Charges a/c.... ...	Rs. 0-06	Lost Books Recovered ...		Rs. 18-
Telephone a/c.	Rs. 230-44	Excess of Expenditure over		
Auditor's fee a/c.	Rs. 300-00	Income transferred to Fund		
First Aid a/c.	Rs. 5-25	account in the Balance Sheet		Rs. 9,472-
Maintenance of Typewriter...	Rs. 6-00			
Insecticide of Library books a/c.	Rs. 41-56			

Depreciation on :—

Type-writer @ 15% ...	Rs.	349-00
Fire Extinguisher @ 10% ...	Rs.	27-60
Canteen Equipment @ 10%...	Rs.	3-90
Cine Projector @ 20% ...	Rs.	1,137-24
Office Equipment @ 10% ...	Rs.	41-23
Misc. Purchased @ 30% ...	Rs.	34-15
Library books purchased @10%	Rs.	5,306-50
Library Equipment @ 6% ...	Rs.	453-07
Canteen utensils and crockeries @ 10% ...	Rs.	105-21
Furniture and Fixture @ 6%	Rs.	883-84
Duplicator Machine @ 20%...	Rs.	149-88
Lost books written off ...	Rs.	421-18
Breakage of Canteen utensils & crockeries ...	Rs.	55-25
	Rs.	58,415-13

Rs. 58,415-13

M. K. Deb,
Chartered Accountant.

ISWARCHANDRA PATHABHAVAN (DAY STUDENT' HOME)
BALANCE SHEET AS AT 31ST MARCH, 1959.

Fund and Liabilities :		*Property and Assests* :		
Capital Grant :		*Furniture and Fixtures*		
As per last account ...	Rs. 1,07,000-00	As per last account ...	Rs. 13,526-44	
		Add during the year ...	Rs. 1,204-18	
			Rs. 14,730-62	
		Less Depreciation @ 6%p.a.	Rs. 883-84	Rs. 13,846-78
		Canteen Utensils		
		As per last account ...	Rs, 970-75	
		Add during the year ...	Rs. 81-37	
			Rs. 1,052-12	
		Less Depreciation @ 10%p.a.	Rs. 105-21	
			Rs. 946-91	
		Less Breakage	Rs. 55-25	Rs. 891-66
		Library Equipments		
		As per last account ...	Rs. 2,597-77	
		Add during the year ...	Rs. 4,598-50	
			Rs. 7,196-27	
		Less Depreciation @ 6%p.a.	Rs. 453-07	
			Rs. 6,743-20	
		Less excess payment made formerly now recovered	Rs. 80-87	Rs. 6,662-38
		Typewriter		
		As per last account ...	Rs. 2,328-00	
		Less Depreciation @ 15%p.a.	Rs. 349-00	Rs. 1,979-00
		Duplicating Machine		
		As per last account ...	Rs. 749-38	
		Less Depreciation @ 20%p.a.	Rs. 149-88	Rs. 599-50

Library Books		
As per last account ...	Rs. 39.581-18	
Add during the year ...	Rs. 13,484-83	
	Rs. 53,065-01	
Add value of books previously written off now recovered	Rs. 18-20	
	Rs. 53,083-21	
Less Depreciation @ 10%p.a.	Rs. 5,306-50	
	Rs 47,776-71	
Less value of lost books written off ...	Rs. 421-18	Rs. 47,355-53
Cine Projector		
At cost	Rs. 5.686-18	
Less Depreciation @ 20%p.a.	Rs. 1,137-24	Rs. 4,548-94
Fire Extinguisher		
At cost	Rs. 276-00	
Less Depreciation @ 10%p.a.	Rs. 27-60	Rs. 248-40
Canteen Equipment		
At cost	Rs. 38-99	
Less Depreciation @ 10%p a.	Rs. 3-90	Rs. 35-09
Office Equipment		
At cost	Rs. 412-36	
Less Depreciation @ 10%p.a.	Rs. 41-23	Rs. 371-13
Miscellaneous Purchased		
At cost (garden implements, binds, etc.)	Rs. 118-83	
Less Depreciation @ 30%p.a.	Rs, 34-15	Rs. 84-68
Advances		
Higginbothams Private Ltd. (Advance payment for Lib. Books)	Rs. 2,014-56	
Education Directorate (Corpn. Tax for 1958-59) ..	Rs. 4,121-37	
G. N. Sanyal	Rs. 29-47	
M/s. Muktrako & Agency	Rs. 80-87	Rs. 6,246-27
Cash and Bank Balance		
Cash in Hand (as certified)	Rs. 363-97	
Cash with State Bank of India	Rs. 22,916-86	Rs. 23-280-83
Fund		
Excess of Expenditure over income for the year ..	Rs. 9,472-68	
Less Credit Balance of last yr.	Rs. 8,622-82	Rs. 849-86

Rs. 1,07,000-00 Rs. 1,07,000-00

Reviews and Notices of Books

The Cultural Heritage of India—Volume III, The Philosophies—Editor Haridas Bhattacharyya, M.A., B.L., P.R.S., The Ramakrishna Mission Institute of Culture, Calcutta, Second Edition, 1953.

This is a work of 695 pages on the different systems of Indian philosophy developed in the past, especially in the mediaeval period. It purports to be the history of Indian thought. But, as many hands have gone into the making of it, it lacks unity of plan and is in consequence neither history nor a string of special studies, a mixture of both though it is.

The book has five parts which respectively deal with "the philosophical systems" "the Vedanta", "the religious philosophies", "the problems of philosophy", and "the philosophical sciences."

Part I contains the topics : "Rise of the philosophical schools", "The Sāṁkhya", "Yoga psychology", "Nyāya-Vaiśeṣika", "Navya-Nyāya", "Purva Mimāṁsā," and "Materialists, Sceptics, and Agnostics." This part is indeed headed "The philosophical systems", but the system or systems of Vedānta are not considered therein. "The Vedanta" is nevertheless the heading of Part II. We for our part, however, cannot see how "the philosophy of the Bhāgavata" finds a place under Vedānta.

Part III is called the Religious philosophies, and in it "the philosophy of Saivism", "the path of Yoga in the Geeta", "philosophy of the Yoga-vāśiṣṭha", "philosophy of the Tantras", the philosophy of Mysticism", and "philosophy in popular literature" are the titles. The path of yoga is obviously enough yoga, and we are at a loss to understand how or why it is placed under "philosophies". Again, if Saivism is a philosophy, why is it not placed under "the philosophical systems" in Part I? So also in regard to the Tantras. We may be told that neither of these is or represents a system of philosophy, although each is a philosophy. But the distinction, if any, between a system of philosophy and a philosophy remains unclear. Further "the philosophy of Mysticism" is definitely a contradiction in terms. However differently the term "philosophy" may be defined, philosophy, to be sure, is an intellectual pursuit. Mysticism, on the other hand, is that kind of experience which transcends thought and intellect. There can therefore be no philosophical analysis of mystical experience. People very often speak of philosophy of this or that thing; this is only a manner of speaking. But lo! we are told that there is philosophy even in popular literature. There is perhaps no harm in philosophy being popular. But, if philosophy be philosophy, how does it find its way into popular literature we wonder.

The editor in the preface says: "The third volume devoted to the philosophies of India was the first to be completed and is being released for publication first." Unfortunately, however, Part IV bears the title "The Problems of Philosophy", which, needless to say, does not mean the problems of Indian philosophy. Still, under this head are discussed some themes which cover only some aspects of the Indian philosophies of the past.

Part V receives the title "The Philosophical Sciences", and comprises subjects such as Indian theism, Indian epistemology, the art of philosophical disputation, Indian psychology, types of human nature, Indian ethics, and philosophy of value. Nowadays we indeed hear of a subject called scientific philosophy, meaning a kind of philosophy which is founded on the sciences, though generally a clear distinction is made between science and philosophy. But the phrase "philosophical sciences" is assuredly unintelligible. Is Indian theism a science or even a philosophical science if it means anything at all? Art as such, as we know, is distinct from science. But in Part V the art of philosophical disputation becomes a science. It goes without saying that psychology is a science. Why, then, call Indian psychology a philosophical science ? The philosophy of value, as the very name indicates, is a philosophy, and so we fail to understand how it can be regarded as a philosophical science in any sense.

So much for the arrangement of the papers that together make up the volume. It is now fairly clear that there has been overmuch of planning with confused conceptions with the result that a worthy project has been more than spoiled. And the responsibility rests squarely on the editor.

As to the standard exhibited by the writings, very many articles come from the pens of renowned Indian scholars in philosophy. They really are illuminating pieces of enduring value and importance. Outstanding among the contributors are Prof. M. Hiriyanna, Pandit Pramathanath Tarkabhushan, Pandit Anantakrishna Sastri, Prof. Krishnachandra Bhattacharyya, Prof. P. N. Srinivasachari, Dr. S. N. Dasgupta, and Dr. Ganganath Jha. Some articles are, however, mere cataloguing, and are obviously misfits in the book. In the preface the editor says: "Of the thirty-nine articles contained in the present volume thirteen are old." I think he means to say that the rest have been added in the new edition of the book. And, as I see, among them are the badly-written pieces, including those by the editor himself, which are badly in need of editing. It should be noted that a great work like *The Cultural Heritage of India* must maintain a very high standard of penmanship and must not contain any unworthy stuff.

There is doubtless a laudable object behind the planning of this voluminous book. But the achievement is not, to say the least, commensurate with the vast outlay and amount of labour the publication involves.

ADHAR CHANDRA DAS.

Ourselves

CONVOCATION ADDRESSES

Our University celebrated its annual convocation in last January. The Convocation address on the 21st January was delivered by Professor Humayun Kabir, Minister for Scientific Research and Cultural Affairs, Government of India. The Vice-Chancellor of the University, Dr. N. K. Sidhanta in his address presented the account of the main events in the life of the University during the preceding year.

Professor Kabir in his address dealt with the problem of large groups of young men and women who feel maladjusted in society. The reasons for this maladjustment, in his opinion, were a lingering superstition that educated men and women must perform only certain special types of jobs, and a reluctance on their part to move outside their immediate environment. They forget that the corollary to universal education is that every kind of job will have to be performed by educated men and women.

What is necessary at the present moment is a new consciousness of the dignity of labour. Youth unrest and student indiscipline thoughtout the country today also occupied a considerable portion of the address of Prof. Kabir. Unrest is sometimes inevitable and healthy in a changing and dynamic society. But when unrest is turned into indiscipline, it becomes a cause for alarm. Measures to deal with the problem may extend to economic, political and social levels. But educational institutions, schools and colleges can do much by the co-operation of teachers and students alone. Our educational institutions must be re-invigorated and infused with new life. Teachers must do the reclamation work of rescuing students from dangerous paths. A large proportion of the students who crowd into colleges and universities today do hardly any work for the major part of their academic life. Many idle away their time in useless or even harmful activities and seek to cram in the last few weeks or months work that should have been done steadily and earnestly over two or three years. One may get through an examination by adopting such methods, but these short-cuts do not provide the training of body, mind and character which alone can guarantee success in life. Perhaps one reason for this state of affairs is that the insistence on intellectual standards has become somewhat lax. In the name of spread of higher education, standards have been deliberately lowered. It is sometimes forgotten that education in general, and higher education in particular, demand unflinching devotion to truth. Even more regrettable has been the occasional intrusion of non-academic factors into academic life. It is of course true that the university cannot remain aloof from the powerful currents which sweep through society at any stage, but university teachers and administrators should be able to play their part in such a situation.

Our Vice-Cnancellor, Dr. N. K. Sidhanta, devoted the main portion of his address delivered at the annual convocation of the Patna University on 11th February, 1960, to this problem. He expressed his deep concern that the influence of the political leader was getting the better of the influence of the teacher on his pupils. Newspapers and publicity agents often make the politician loom larger than the obscure teacher. But if the latter is genuinely interested in his work, and if he can fill his subject with his personality, he gets nearer his pupils, and in the long run, is bound to have the confidence of his students in a more intimate manner than the outsider who appears in student centreso nly periodically to persuade the students to his way of thinking, by dazzling orations and subtle arguments. Prof. Sidhanta also stressed the disturbing fact that there was a growing estrangement between teachers and pupils because the latter felt themselves to be living in a different world from their teachers. The teachers found it too difficult to understand the longing and aspirations of their pupils ; and the students also could not understand the language of teaching, the trend of thought which was unfolded. Teachers, particularly young teachers should now be in a position to re-establish their old glory and prestige A good teacher is one of the rarest of human beings. He has a capacity for leadership, and above all, a genius for friendship. "A great teacher," said a great thinker, "knows, like Moses, how to strike leaving water from the rock."

Notifications

CALCUTTA UNIVERSITY

Notification No CSR/1/St./59.

It is notified for general information that the following changes in the schedules annexed to the First Statutes relating to the

(i) Constitution and Function of the Faculties (p. 77),
(ii) Constitution, Powers and Duties of the Board of Studies (p. 89) and,
(iii) University Colleges (p. 125) were adopted by the Senate on the 29th August 1959 :—

(1) In the table II of the schedule annexed to the First Statues and Regulations relating to the Constitution and Function of the Faculties (p. 77) the words '(9A) Journalism' under (b) Departments of Post-Graduate Teaching against Faculty of Arts and the foot-note thereof be deleted.

(2) Under columns I & II in table II of the schedule annexed to the First Statutes relating to the Constitution, Powers and Duties of the Board of Studies (p. 89) words '21A Journalism............Faculty of Arts' be replaced by '21A Journalism ....Faculty of Journalism.'

(3) In column II of the First schedule attached to the Statuts relating to the University Colleges (p. 125) the words '(xv) Journalism (Diploma Course)' after (xiv) Education' be deleted.

Senate House,
The 11th November, 1959.

D. Chakravarti,
Registrar.

CALCUTTA UNIVERSITY

Notification No. CSR/19/59.

It is notified for general information that the following changes in Chapter XXXIII of the Regulations relating to the M.A. Examination of the University were adopted by the Academic Council on 3rd June, 1959 and accepted by the Senate on 29th August, 1959 :—

"The following proviso be added at the end of paragraph 5, sec 1 of Chapter XXXIII of the Regulations (p. 94) of the Regulations (1955 edition) :—

Provided that any candidate who has passed the B.Com. Examination not less than three academical years previously or the M.A. Examination in Commerce or the M.Com. Examination may be admitted as a private student to the M.A. Examination in any subject provided he passes beforehand the B.A. Examination in English (Three Papers) and Vernacular Language."

The Academic Council at their meeting held on 24th September, 1959, decided to give immediate effect to the above changes.

Senate House,
The 5th November, 1959.

D. Chakravarti,
Registrar.

CALCUTTA UNIVERSITY

Notification No CSR/20/59.

It is notified for general information that the following changes in Chapter XL of the Regulations relating to the B.T. Examination were adopted by the Academic Council on 26th May, 1958 and accepted by the Senate on 29th August, 1959 :—

"The following proviso be added at the end of Section 7(4) of Chapter XL of the Regulations—1955 edition (p. 356) :

Provided that candidates for the Contents and Methods of Teaching in special subjects other than English may write their answer on the question on lesson notes in Bengali and those on the remaining questions in English.

This however will not apply to those who have taken up Methods of Teaching i English or an Indian Language other than Bengali."

The Academic Council at their meeting held on 24th September, 1959, decided to giv effect to the above changes from the Examination of 1960.

Senate House, The 4th November, 1959. D. Chakravarti, Registra

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CALCUTTA UNIVERSITY

Notification No. CSR/21/59.

It is notified for general information that the following changes in Chapter XL of th Regulations relating to the B.T. Examination were adopted by the Academic Council o 3 rd June, 1959 and accepted by the Senate on 29th August, 1959 :—

'In Chapter XL page 368 of the Regulations (1955 edition) under Section 7(4) (iii add after "Assamese" "or Nepali";

In page 373 of the Regulations (1955 Edn.) under contents and Methods of Teachin School subjects Section (iii) after "Assamese" add the word "or Nepali."

Under the detailed syllabus of a Modern Indian Language (Bengali) page 375 of th Regulations (1955, Edition) line 10 from the top delete the word "and" betwee Hindi and Urdu and add the word "and Nepali" after 'Urdu.'

The Academic Council at their meeting held on 24th September, 1959, decided to giv effect to the above changes from the examination of 1960.

Senate House, The 11th November, 1959. D. Chakravarti, Registra

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CALCUTTA UNIVERSITY

NOTIFICATION No. CSR/22/59

It is notified for general information that the revised Regulations for the Diploma in Public Health (Chapter L) as shown in the accompanying pamphlet were adopted by the Academic Council on 11th April, 1959 and accepted by the Senate on 29th August, 1959.

The Academic Council at their meeting held on 24th September, 1959, decided to give effect to the Regulations from 1st June, 1959.

SENATE HOUSE: *The 4th November, 1959* D. CHAKRAVARTI, *Registrar.*

CHAPTER L

DIPLOMA IN PUBLIC HEALTH

1. An examination for a Diploma in Public Health shall be held twice every year in Calcutta and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any Bachelor of Medicine and Surgery or Licentiate in Medicine and Surgery of this University or of any other University recognised by this University for the purpose may be admitted to this examination on production of certificates:—

(*i*) of having, subsequent to passing the M.B.B.S., or L.M.S. examination, attended an approved course of whole-time continuous study extending over one academic year, in the following subjects:—

(*a*) Microbiology including Bacteriology, Immunology and Serology, Vuruses, Protozoology, Helminthology and Medical Entomology as applied to epidemiology and Public Health.

(*b*) Bio-chemistry, Food and Nutrition in relation to Public Health.

(*c*) Medical Statistics.

(*d*) Epidemiology and Communicable Diseases.

(*e*) Principles of Public Health Organisation and Administration, Public Health Law, Medical Care and Social Welfare, their history and evolution;; Preventive and Social Medicine; Health Education; International Health Organisation.

(*f*) Sanitary Engineering including Sanitation, Water Supplies, Housing, Town Planning and Rural Sanitation.

(*g*) Occupational and Industrial Medicine including applied Physiology and Industrial Psychology.

(*h*) Maternity and Child Welfare.

(Instruction in the subjects specified above will include practical demonstrations of problems, exercises, seminars and visits to place and institutions of importance to Public Health).

(*ii*) of having been diligently engaged in acquiring knowledge of Public Health practice under a Medical Officer of Health in urban and rural areas having a population of not less than fifty thousand in each of the areas. Such training shall be at least of 100 hours' duration in each of the areas.

(*iii*) of having attended for not less than 40 hours in the Clinical Practice of an approved hospital or hospitals for infectious and common tropical diseases and received wherein instruction diagnosis, therapy, epidemiology and method of hospital administration.

(*iv*) of having practised the medical profession for a continuous period of 2 years which may include the period of training specified above.

3. Every candidate for admission to the examination shall send his application to the Registrar with a certificate in the form prescribed by the Syndicate and a fee of Rs. 200, at least a fortnight before the date fixed for the commencement of the examination:—

4. A candidate who fails to pass or present himself for the examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a fee of Rs. 50, on each occasion.

5. Every candidate shall be examined in the following subjects:—

Subjects	Marks		
	Maximum		Pass Marks
	Written	Oral	
(*a*) *Paper I (3hours)*			
Microbiology including Medical Entomology and Parasitology, Epidemiology and Communicable Diseases.	100	100	100
(*b*) *Paper II (3 hours)*			
Public Health Administration including Preventive and Social Medicine, Public Health Law, Medical Statistics and Health Education.	100	100	100
(*c*) *Paper III (3 hours)*			
Environmental Sanitation (including Public Health Chemistry) and Occupational Health.	100	100	100
(*d*) *Paper IV (3 hours)*			
Care of Mother and Child including Chemistry and Physiology of Human Nutrition.	100	100	100
	400	400	400

6. In order to pass, a candidate must obtain at least 50% of marks in each of the above four papers, the written and oral marks being taken together.

7. A candidate who fails to pass in any one of the four papers mentioned under paragraph 5 above may be re-examined in that paper on payment of the prescribed fee as stated above. If the failure is in more than one paper, the candidate will have to re-appear in all the papers in the subsequent examination.

8. As soon as possible after the examination, the Syndicate shall publish a list of successful candidates arranged in alphabetical order. If, in the opinion of the Examiners, sufficient merit be evinced, a University Gold Medal will be awarded to the candidate, who shall have passed with the greatest distinction.

9. A candidate, who has completed the course of study under the old regulations shall be permitted to appear at the examination under this new regulation until further changes.

10. Candidates, who already hold the Diploma in Maternity and Child Welfare or the Diploma in Industrial Health of the Calcutta University shall be exempted from attending the first four months of the D.P.H. Course.

11. The limits of subjects referred to in paragraph 5 above shall be as follows:—

(a) *Microbiology*

(i) Bacteriology:

The classification of bacteria, their morphology and physiology including their cultivation, fermentation, reaction and pathogenicity.

The Pathogenic Cocci and Bacteria-Streptococcus, Meningococcus, Gonococcus, Typhoid, Salmonella, Dysentery, Diphtheria, Melleii, Tubercle, Leprosy, Plague, Malitensis, Abortus, Anthrax, Tetanus, Botulinus and the Cholera vibrio, including the mode of transmission and method of isolation.

The preparation, standardisation, storage and uses of prophylactic vaccines.

The destruction of bacteria and disinfection.

The bacteriology of water, milk and milk products and other foodstuffs including the methods of collection and examination of samples and interpretation of the results obtained.

The bacteriology of air, dust, soil and sewage.

(ii) Immunology and Serology:

Different forms of immunity in the individual. Mechanism of immunity in different infections. Immunity in the herd.

The serological tests in common use in diagnosis. Agglutination, Precipitation, Flocculation, Jellification, Complement fixation and Allergic Tests.

Immunisation, including the preparation, standardisation, storage and use of anti-sera used in prophylaxis and treatment.

(iii) Filterable Viruses and the Rickettsias:

The general characteristics of viruses and the methods of studying them—filtration, tissue culture, cell inclusions.

The pathogenic viruses—viriola, vaccinia, measles, chicken-pox, poliomyelitis, influenza, encephalitis, lethargica, yellow fever, dengue, papataci fever, rabies, trachoma, including the mode of transmission of diseases caused by them.

Methods of preparation, storage and uses of prophylactic vaccines against small-pox, rabies, yellow fever.

The bacteriophage and its uses in public health.

The Rickettsias and their mode of transmission.

(iv) Medical Entomology:

The classification of the Animal Kingdom and the general characters of insects, including their collection, identification and preservation.

Insects concerned in the transmission of disease—mosquito, sandfly, housefly, flea, louse, tick, mite. Their life-cycle and habits, the way in which they act as carriers and the methods of control.

(v) Protozoology:

The classification of protozoa, their morphology and methods used in studying them.

The pathogenic protozoa—E.histolytica, G.lamblia, B.coli, L.donovani, L.tropica, P.vivax, P.malariae, P.falciparum, Trypanosomes, Coccidia and Sarcosporidiae, including the mode of transmission and methods for collecting the examining infective material.

The pathogenic spirochaetes—T. Pallidum. T.pertenue, Sp.recurrentis, Lept.icterchaemorrhagiac, and the spirochaetes of Vincents' engina and Naga sore. Their mode of transmission and methods for collecting and examining infective material.

(vi) *Helminthology* :

The classification of the helminth parasites, their morphology and methods used in studying them.

Helminths of public health importance- Nematodes- hookworms, Wuchereria banchrofti, Filaria, malayi and Dracumculus modinensis, Cestodes—Tenia solium and saginata, Echinococcus; and Trematodes. Their morphology, biology, recognition and life-history. Mode of transmission and methods of destruction of helminths in various materials.

(b) *Public Health Chemistry and Physiology (Bio-chemistry and Bio-physics) Applied to Public Health*

(*i*) Public Health Chemistry:

General principles and methods of quantitative analysis, volumetric, gravimetric and gasometric. The theory and determination of Hydrogenion concentration. Methods of collection of water, sewage, sewage effluents and other effluents, milk, common articles of foods and disinfectants, such as cyano gas, pyrethrum, retinone, paris green, mineral oils, etc., for chemical analysis. Principles of qualitative and quantitative analysis of the above substances. Interpretation of reports of analysis.

(*ii*) Physiology (Bio-chemistry and Bio-physics) applied to Public Health:

General: Adjustment of individuals and communities to environment—internal and external—influencing the state of health. The span of life, its prolongation and rejuvinescence. Influence of geographical position and altitude on health including climatological considerations. Physiological effects of radiations, *e.g.*, infra-red, ultra-violet, X-ray, etc. Illumination and hygiene of the eyes. Physiology of ventilation, air cooling and air conditioning. Clothing in the tropics. Urban and rural environments. Socio-economic factors. Occupational environment, agricultural, industry, smoke, dust and gas pollution of air. Effects of noise and vibration. Assessment of Physical fitness.

Practical work: Methods of determining temperature, humidity and atmospheric pressure. Methods of measuring comfort conditions. Detection and estimation of atmospheric pollution due to smoke, dust and poisonous gases. Photometric measurement of natural and artificial light in schools and factories. Determining efficiency of clothing. Estimation of work and total metabolism: determination of onset of fatigue and inefficiency. Treatment of asphyxia, electric shock and gas poisoning.

(*iii*) Nutrition:

The place of nutrition in Public Health, its special significance under Indian conditions. Basal and total metabolism. Energy requirements and caloric values of foods. Carbohydrates and fats and their role in nutrition. Protein requirement of man and its determination. Inorganic elements, calcium, phosphorus, iodine, iron, copper and other trace elements and their importance in nutrition. Vitamins, their nature, function, optimum requirements, clinical and pathological results of vitamin deficiencies. Balanced diets in relation to age, sex, occupation and physiological states. Methods of cooking and their effect on the nutritive values of foods. Assessment of state of nutrition of individuals and of communities. Methods of conducting dietary surveys and making suggestions for improvement. Methods of conducting field experiments in nutrition. Socio-economic factors in nutrition. Relation of agriculture, animal husbandry and food industries to nutrition. Nutrition propaganda.

Practical work: The use of food analytical tables in planning of balanced diets for various groups. Detection of vitamin and other deficiencies by anthropometric, clinical and physiological methods. Nutrition and dietary surveys and constructive criticism of food habits and food production.

(c) *Prineiples and Public Health and Sanitation*

The principles and practice of personal, communal, international and occupational hygiene. The effect of climate environment and food on the human organism and communities, water and water-supplies; water purification and disinfection, waterborne diseases. The study of the atmosphere in its relation to health and disease; ventilation of towns, houses and buildings; the causes and effects of vitiation of the atmosphere; the planning of towns, villages, houses and huts, factories and barracks.

The effect of soils on health; building sites. The collection and disposal of refuse and excretal matter. Foodstuffs, their composition, purity, examination, sophistication, etc.

The study of diets specially in regard to tropical countries with special reference to such diseases as kwashiokar, beriberi, epidemic dropsy, rickets, scurvy, etc.

The effects of famine conditions and economic stress on the human organism. Clothing in relation especially to climate.

Epidemic, endemic and infectious diseases of both temperate and tropical climates. Their epidemiology, geographical and seasonable distribution, origin, causation, mode of spread, etc., and prevention, special attention being paid to the study of such diseases as occur in India.

The control and prevention of infectious diseases by isolation, disinfection, vaccination, etc., with special reference to small-pox, cholera, plague and other tropical diseases. The construction and administration of hospitals for infectious diseases. Industrial hygiene, the special diseases of occupations, causation, their detection and prevention. Maternity and child welfare work.

School hygiene and medical examination of school children. Anti-tuberculosis schemes and their applicability. Veneral diseases; their cause; their control and treatment by the State. The control of food-supplies, markets, dairies, milkshops, slaughter houses.

Meat inspection, food inspection, methods of examination of sound and unsound food.

Building construction; the making of plans. their interpretation and criticism.

(*d*) *Sanitary Law*

The history of sanitary law and administration in England, India and other countries. The present system of sanitary administration in India. Forms of Local Government and their relation to public health and sanitation. The sanitary laws and enactment of Great Britain and India. The duties of health officers, sanitary inspectors, factory inspectors, certifying surgeons—Port-Health Laws and duties of Port-Health officers.

(*e*) *Medical Statistics*

The collection, modes of calculation and the interpretation of medical statistics. The census; calculation of population, birth rates, death rates, marriage rates, infantile mortality rates, etc. Elementary statistical methods and their application and interpretation. Life tables. The preparation of sanitary reports. The study of the Annual Reports of Director General of Health Services and Directors of Health Services in India; methods of epidemiological investigation.

CALCUTTA UNIVERSITY

NOTIFICATION No. CSR/23/59

It is notified for general information that the changes in Chapter XLVI-C (B.D.S.) of the Regulations, making provisions for the Condensed B.D.S. Course as set out in the accompanying pamphlet were adopted by the Academic Council on 3rd June, 1959 and accepted by the Senate on 29th August, 1959.

The Academic Council at their meeting held on 24th September, 1959, decided to give immediate effect to the above changes.

SENATE HOUSE:
The 4th November, 1959.

D. CHAKRAVARTI,
Registrar.

The following Regulations be inserted at the end of the para beginning with ' candidates who have passed '..................and ending with ' remaining the same ' at page 483 of the Regulations (1955 edition).

' Notwithstanding anything contained in the foregoing regulations, candidates for the B.D.S. Examination who have previously passed the Final Examination for Licentiateship in Dentistry of the State Medical Faculty of Bengal or the S.M.F. of West Bengal, will be permitted to appear at First, Second, Third, and Final Professional Examinations for the Degree of B.D.S. as non-collegiate students on their fulfilling the conditions stated below:

The First Professional Examination

Any candidate who fulfils the following conditions may be admitted to this Examination:

(1) That he has passed the Intermediate Examination in Science with Physics, Chemistry and Biology (including practical test) of the Calcutta University or of a recognised Indian University or Board.

(2) That he has completed, since passing the Intermediate Examination with Physics, Chemistry and Biology and the L.D.Sc. Examination a regular course of study in the subjects of the Examination for not less than six months in a college affiliated to the University to the Degree of Bachelor of Dental Surgery.

(3) The provisions of the Regulations No. 2, 3, 4, 5 & 6 of Chapter XLVI-C under 'The First Professional Examination' shall be applicable to him.

The Second Professional Examination

Any candidate who fulfils the following conditions may be admitted to this examination:

(1) That he has passed the First Professional Examination for the Degree of B.D.S. of the University at least six months previously.

(2) That he has completed, since passing the First Professional Examination a regular course of study in the subjects of the Examination for not less than six months in a college affiliated to the University to the Degree of Bachelor of Dental Surgery.

(3) The provisions of the Regulations No. 2, 3, 4, 5 & 6 of Chapter XLVI-C under 'The Second Professional Examination' shall be applicable to him.

The Third Professional Examination

Any candidate who fulfils the following conditions may be admitted to this examination:

(1) That he has passed the Second Professional Examination for the Degree of B.D.S. of the University at least six months previously.

(2) That he has completed, since passing the Second Professional Examination a regular course of study in the subjects of the Examination for not less than six months in a college affiliated to the University to the Degree of Bachelor of Dental Surgery.

(3) The provisions of the Regulations No. 2, 3, 4, 5 & 6 of Chapter XLVI-C under 'The Third Professional Examination' shall be applicable to him.

The Final Professional Examination

Any candidate who fulfils the following conditions may be admitted to this Examinations:

(1) That he has passed the Third Professional Examination for the Degree of B.D.S. of the University at least six months previously.

(2) That he has completed, since passing the Third Professional Examination a regular course of study in the subjects of the Examination for not less than six months in a college affiliated to the University to the Degree of Bachelor of Dental Surgery.

(3) The provisions of the Regulations No. 2, 3, 4, 5 & 6 of Chapter XLVI-C under 'The Final Professional Examination' shall be applicable to him."

CALCUTTA UNIVERSITY

NOTIFICATION No. CSR/24/59

It is notified for general information that the Regulations and Syllabi of Studies for the Diploma Course in Venereology as set out in the accompanying pamphlet were adopted by the Academic Council on 11th April, 1959, and accepted by the Senate on 29th August, 1959.

The Academic Council at their meeting held on 24th September, 1959, decided to give effect to the Regulations from the Examination of 1961.

SENATE HOUSE: D. CHAKRAVARTI,

The 4th November, 1959 *Registrar.*

CHAPTER XLIX-O

DIPLOMA IN VENEREOLOGY

1. Candidates for the Diploma Course in Venereal Diseases shall be required to pass the M.B.B.S. Degree Examination of this University or of any other Universities recognised by this University or examination accepted by the Syndicate as equivalent thereto.

2. No candidate shall be eligible for the above Diploma Course unless he has, subsequent to passing the M.B.B.S. Degree Examination held House appointment or Post Graduate Training for a period of one year in the Department of Venereal Diseases of a recognised Hospital attached to a teaching Institution of this University or of any other Universities accepted as equivalent thereto or produce evidence of having been in practice for three years subsequent to passing M.B.B.S. Degree Examination.

3. Every candidate who wishes to appear for the Diploma Course shall be required to register his name with the University at the commencement of the academic course.

4. Candidates who have attended after graduation or worked in a V.D. Clinic of an Institution affiliated to a teaching Hospital of this University for six months may claim exemption from the Diploma Course for a period not exceeding six months.

5. The Course of study for the Diploma shall extend over a period of one academic year and shall be conducted in the Venereal Disease Department of a General or Special Hospital affiliated to the University for the purpose and having at least ten beds for treatment of Venereal Diseases.

6. During this period the candidates shall be required also to undergo training for one month in Serology and one month in Dermatology.

7. The Course of study shall consist of lectures, lecture demonstrations, instructions in laboratory technique and Public Health and Social Service aspects of Venereal Diseases. Each candidate shall be required to show evidence of having done 20 minor operations and having given 100 injections, and having done 50 D.G.I. Tests and having examined 100 smears.

At the end of the course candidates shall be examined in the following :—

A.	Two written papers—3 hours ...	... 100 marks
B.	Clinical Examination and practical	... 100 ,,
C.	Short Cases and Oral Examination ...	... 100 ,,

Candidates obtaining not less than half of the marks in the written examination and half in the Clinical, Practical and Oral Examination shall be declared to have passed the Examination

THE DIPLOMA COURSE

Duration : One Year

Syllabus

A. Anatomy, Physiology of Genitourinary tract.

B. *Syphilis* :

1. Biology, Pathology and Immunology of Syphilis.
2. Clinical Approach to Syphilis.
3. Early Syphilis—Primary, Secondary, Relapsing.
4. Latent Syphilis—Early and Late.
5. Late Symptomatic Syphilis
    (*a*) Benigh
    (*b*) Cardio Vascular
    (*c*) Central Nervous System.
6. Syphilis in Pregnancy
7. Prenatal Syphilis.
8. Treatment of Syphilis.
9. The role of non-specific therapy in Syphilis.
10. Prognosis of Syphilis.
11. Other forms of Treponematosis and its relations to Syphilis.
12. Epidemiology of Syphilis and other Treponemal disease and social aspect of.

C. *Gonorrhoea* :

1. Acute Gonorrhoea in the male and female.
2. Chronic Gonorrhoea.
3. Complicated Gonorrhoea.
4. Gonorrhoea in Children.
5. Pathology of Gonorrhoea.
6. Non-Gonoccal Urethritis including non-specific vaginal discharges.
7. Treatment and prognosis.

D. Chancroids, their Diagnosis and Management :

E. Lympo Granuloma Venereum—their Diagnosis and Management :

of (*a*) Bubos.
(*b*) Esthionebe.
(*c*) Ano-Rectal Syndrome.

F. Granuloma Venereum—their Diagnosis and management :

G. Other minor diseases of doubtful venereal origin :

H. Social aspects of Venereal Disease :

I Marriage and Venereal Disease :

J. Sterility and Venereal Diseases :

K. Control of Venereal Diseases :

Observation of Capt. P. B. Mukherjee

Para. 1.—The word "Course" in line 1 should be "Examination".

Para. 2.—I am of opinion that all candidates for this Diploma Examination must have held a House Surgeon's job in the General Surgical Department of a Medical College Hospital for at least one year and then a House Surgeonship in a Venereal Disease Ward of the same Hospital for at least 6 months and then undergone the course for one year (see Andhra Regulations).

Insert the word "undergone" between "or" and "Post" in line 3.

Insert the words "affiliated to the Final M.B.B.S. standard" between "Institution" and "of" in line 5.

Para 3.—The word "Course" in line 1 should be "Examination".

Para. 4.—The word "affiliated" in line 2 should be "attached".
The words "affiliated to the Final M.B.B.S. standard" should be inserted between "Hospital" and "of" in line 2.
Comments on exemption—Why? When no such exemption is proposed for those mentioned in (2) viz. those who have done H.S. or P.G. Training for one year in a Venereal Department.

Para. 5.—"Ten beds" appear to be too low a figure; should be at least "25 beds".

Para. 7.—"A. Two written papers—3 hours' should be replaced by—100 marks".
"A. Two written papers of 3 hours' duration each—100 marks each.

Paper I : Anatomy, Physiology, Pathology and Bacteriology of skin and Genitourinary Tract.

Paper II : Venereal Diseases, including Social and Preventive Aspects".

Insert the word "Examination" after "practical" under (B).

In the Syllabus (page 2) : "A. Anatomy, Physiology of Genitourinary tract" should be replaced by

"A. Anatomy, Physiology, Pathology and Bacteriology of skin and of Genitourinary tract".

Comments of Prof. S. Ghosh

Para. 1.—The word 'Course' may be changed to 'Examination'.

Para. 2—(*a*) I agree with suggestion regarding House Surgeonship in the Surgical and V. D. Dept. The period in the Surgical Department may be reduced to 6 months. The period in V.D. Department may be fixed at six months as suggested by Capt. Mukherjee. I have discussed this point with Capt. P. B. Mukherjee.
(*b*) The word 'Course' may be changed to 'Examination'.
(*c*) The word 'undergone' may be inserted.

Para 3.—Suggestion—agreed to.

Para 4.—Suggestions—agreed to, the question of exemption from the diploma course may be deleted as suggested by Capt. Mukherjee.

Para 5.—The minimum number of beds may be fixed at 20.

Para. 6.—No comments.

Para. 7.—A. The suggestion regarding Paper I and Paper II is agreed to.

Page 2.—Syllabus :

1. Reference 'A'—the suggestion regarding Pathology and Bacteriology of Skin is agreed to.

CALCUTTA UNIVERSITY

NOTIFICATION No. CSR/25/59

It is notified for general information that the revised Syllabus in Chemistry for the I.A. & I.Sc. Examinations as set out in the accompanying pamphlet were adopted by the Academic Council on 18th September, 1958. and accepted by the Senate on 29th September, 1959.

SENATE HOUSE:
The 4th November, 1959

D. CHAKRAVARTI,
Registrar.

REVISED SYLLABUS IN CHEMISTRY

INTERMEDIATE EXAMINATIONS (I.A. & I.Sc.)

Theoretical

The course would be distributed as follows :—

Paper I—Group A—General Chemistry	(30 marks)	75	(30+45)	marks
Group B—Non-metals	(45 .,)			
Paper II—Group A—Metal	(45 marks)	75	(45+30)	marks
Group B—Organic Chemistry	(30 .,)			

Sufficient choice of questions will be allowed.

General Chemistry

Mixture and Pure substances. Common Laboratory processes; solution, crystallisation, decantation; filtration, evaporation, distillation, sublimation; separation of ingredients of simple mixtures by these processes. Solubility. Physical and chemical changes. Conservation of mass, Elements and Compounds.

Laws of chemical combination by weight and by volume. Dalton's atomic theory. Avogadro's law. Atoms, molecules, symbols, formulae and equations, valency (definition only).

Determination of approximate atomic weights (by vapour density and percentage composition, atomic heat of solid elements, application of law of isomorphism). Equivalent weight; exact atomic weight from equivalent weight.

Faraday's laws of electrolysis. Elementary ideas of Ionic Theory. Acids, bases, salts; neutralisation.

General Principles of periodic law of elements. Elementary ideas of atomic structure, electro-valency and co-valency.

Chemical problems on the subject-matter of the course.

Non-Metals

Only laboratory methods of preparation, unless otherwise specified, properties and uses of the following are to be studied. Where large-scale preparation is included, only an outline of the Chemistry of the process—omitting all manufacturing and technological details would be required; physico-chemical principles are not expected.

Hydrogen (including preparation by electrolysis of water and manufacture. Oxygen including preparation from liquid air—details of liquefaction and fractionation being omitted) : catalysis, combustion, oxydation, reduction (definition and illustration only); classification of oxides. Water-purification, softening of hard water, gravimetric and volumetric composition; water of crystallisation, solubility. Hydrogen peroxide; ozone (including formula); allotropy (definition and illustrations only).

Composition of air by weight and by volume. Nitrogen, Nitrous oxide, nitric oxide, nitrogen peroxide; composition of nitrous oxide, nitric oxide and nitrogen peroxide. Thermal dissociation. Ammonia including outline of synthetic preparation and composition. Nitric acid (including large scale preparation from sodium nitrate and ammonia; action of nitric acid on carbon, iodine, sulphur, phosphorus, hydrogen sulphide, magnesium, iron, zinc, tin, copper and silver.

Carbon—Allotropic forms and oxides. Volumetric composition of oxides; gravimetric composition of carbon-dioxide, Coal gas including its manufacture. Structure of flame.

Halogens, *i.e.*, Flourine, Chlorine, Bromine, Iodine and their hydracids; large scale preparations of hydrochloric acid, chlorine, bromine and iodine; volumetric composition of hydrochloric acid; Bleaching powder (omitting deduction of formula); potassium chlorate excluding large scale production.

Sulphur—Extraction; modification of sulphur. Hydrogen sulphide; sulphur dioxide including their composition; sulphuric acid (including manufacture).

Phosphorus—Extraction and properties of yellow and red phosphorus, Phosphine excluding its composition. Tri-and Penta-oxide; ortho phosphoric acid. Phosphorus tri-and penta-chloride (preparation); hydrolysis.

Boric acid and borax large scale production is excluded. Silica, sodium silicate, silicic acid, dialysis glass and its manufacture is excluded.

Metals

Differences between metals and non-metals. Occurrence, chemistry of methods of winning (omitting metallurgical details), properties and uses of the following metals :—

Sodium, potassium, copper, silver, calcium, magnesium, zinc, mercury, aluminium, tin, lead and iron.

Preparation (including chemistry of large-scale preparation), properties and uses of their oxides, hydroxide, chlorides, sulphates, sulphides, nitrates and carbonates.

Organic Chemistry

Definition of Organic Chemistry, classification of organic compounds by functional groups, purification of organic compounds, fractional distillation.

Study of the properties of the different functional groups (unsaturation hydroxyl group, carbonyl group, carboxyl group, ester group, halogen, amino group) using the following compounds as typical examples :

Methane, ethane, ethylene, acetylene and their composition, chloroform iodoform, methyl alcohol, ethyl alcohol, diethyl ether, formaldehyde, acetaldehyde, acetone, formic acid, acetic acid, glucose, cane-sugar.

Any simple method of the preparation of the above (omitting details).

Elementary ideas about the eromatic compounds, benzene, aniline, phenol.

Practical

Inorganic

1. Fitting up of simple apparatus, *e.g.*, a wash-bottle.
2. Separation of the ingredients of a solid mixture by solution, filtration, crystallisation, and sublimation.

Performance of experiments involving distillation.

3. Preparation and study of the principal properties of hydrogen, nitric oxide, carbon dioxide, oxygen, ammonia, hydrochloric acid.
4. (*a*) Qualitative analysis, both by the dry and the wet way of simple substances containing not more than one acid and one radical included in the following list :

Silver, lead, mercury, copper, tin, iron, aluminium, zinc, calcium, magnesium, sodium, potassium and amonium;

(*b*) Chloride, nitrate, sulphide, sulphate and carbonate.

Note.—A simple substance is one which is soluble in water or in boiling hydrochloric acid.

CALCUTTA UNIVERSITY CENTRAL LIBRARY

THE
CALCUTTA REVIEW

Vol. 154] MARCH, 1960 [No. 3

STORY OF THE NATIONAL GEOGRAPHIC SOCIETY*

EVELYN PETERSEN

A unique organization with 2,440,000 members living in more than 160 countries and speaking as many languages has its headquarters in Washington, D.C. What single interest can there be that binds such farflung people together? "Geography" is the answer. Icelander and Irishman, Polynesian and Peruvian, New Yorker and Parisian—all belong to the National Geographic Society and satisfy their wanderlust every month by reading its journal, *The National Geographic Magazine.*

The magazine's writers and photographers circle the globe and again and again learn that the tie of membership, spanning oceans and continents, is real and unusual, different from the usual business relationship between a magazine publisher and his subscribers. Returning home, staff men tell countless stories about warm hospitality everywhere. One writer, describing his experiences in Cyprus, told of a luncheon visit with a woman reader of the *Geographic.* When he tried to pay for the lunch, she wouldn't let him.

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*National Geographic Society's headquarters in Washington, D.C.

Organized in 1888 "for the increase and diffusion of geographic knowledge," the Society sponsors research of land, sea and sky, sending teams of scientists, staff writers and photographers on expeditions and field surveys to all parts of the world. The results of such explorations are conveyed to the Society's 2,440.000 members in its monthly illustrated journal, *The National Geographic Mogazine,* prepared here.

The building also houses a large museum and trophy hall; a library, open to scholars, of some 23,000 books on scientific and geographc subjects; a collection of more than 500,000 colour and monochrome photographs, and a completely equipped photographic laboratory.

(Photo No. 52-5750. Accompanies Feature F-59-377 (AM).

"You should be careful," he warned her, jokingly. "The National Geographic Society has more than 2,000,000 members, and if I write that you provide free lunches, they may all come and visit you."

She smiled and threw out her arms.

"But they would all be welcome!"

Such friendliness to the fellow-readers of a magazine has not come about accidentally. Indeed, it was inevitable. For the people who subscribe to the *Geographic* jointly own the Society and participate in its world-wide operations. That is, in large part, the reason for the magazine's success.

In 1888, a small group of Washington scientists, engaged in exploring the natural resources of the United States, began the Society and dedicated it to the "increase and diffusion of geographic knowledge." At the same time, they started a magazine as a means of keeping a record of their discussions. The publication was scholarly, but it was dry and very sparsely read. The members soon realized that if they were indeed to diffuse "geographic knowledge" their journal would need a lighter touch. A bright young editor was the first requirement, and Dr. Alexander Graham Bell, inventor of the telephone, who was then president of the Society, knew where to find him.

Bell wrote to a friend, Professor Edwin A. Grosvenor, asking whether either of his twin sons would care to take the job. Both the Grosvenor boys liked geography, but one of them also liked Dr. Bell's daughter, Elsie May. Thus did Gilbert Grosvenor acquire not only a job but a wife: one who, incidentally, helped him faithfully in his 55 years as the Geographic's editor.

When 23-year-old Gilbert arrived in Washington in 1899, the Society had 900 members. He addressed all the 900 copies of the magazine by hand and carried them on his back to the post office. Today the Society has twice 900 members in the Belgian Congo alone, 900 persons work at its offices in Washington, and the *Geographic* has the largest circulation of any monthly magazine at its price ($1 a copy) in the world.

The only employee in 1899, young Grosvenor started out with little more than a keen desire to humanize the magazine and put Dr. Bell's revolutionary member-subscriber idea into action. As the magazine improved, Bell and Grosvenor hoped more and more readers would want to join the Society. The additional dues could then be used to publish maps and geographic bulletins and to support geographic explorations and research. Publishing experts were convinced the project would fail. So were many members of the Society's board of managers. Even when the magazine was circulating to 150,000 subscribers annually, several Board members wanted to reserve many of its pages for purely technical material. These diehards particularly opposed the use of photographs, except of a strictly " scientific " nature.

The membership continued to grow, and the Society had a building of its own. Yet there were times when Grosvenor could see no solution to his editorial problems. One morning in December, 1904, he arrived at his office, brooding over the material he had not yet found to fill the January issue. He was so discouraged, he scarcely bothered to notice a large, bulky envelope lying on his desk. He opened it listlessly, then started with disbelief as 50 beautiful photographs fell out. They were extraordinary scenes of Tibet's jealously guarded " Forbidden City " of Lhasa, taken by the Buriat explorer Tsibikov and the Kalmuk Norzunov, and presented to the *National Geographic* by the Imperial Russian Geographical Society. On the spot, Grosvenor decided to use them to fill his 11 empty pages. Then he went home and told his wife he expected to be fired.

But the pictures scored a hit and in a few days Grosvenor was unanimously elected to the board of managers. The next year, he published in one issue 74 flashlight photography—the first such pictures ever made—of wild animals in their native habitat. Five years later, in 1910, the magazine pioneered in the use of color illustrations. By then, the *Geographic* had its own staff photographers, and they were the first to make natural-color photos in the stratosphere, under the ground, and under the sea. Today, a typical issue will carry seventy-two pages of four-color illustrations, the total of pictures (including black and white) covering considerably more space than text.

If Grosvenor's eye for pictures was good, so was his hand for money. His careful management made the Society solvent within three years, and by 1906 it had enough surplus to make its first grant for exploration. The society subscribed a substantial sum when Commander Robert E. Peary made the first expedition to the North Pole three years later. The National Geographic flag flew at both the North and South Poles with Admiral Richard E. Byrd, and in 1935 it soared, in the world's largest balloon, to the highest altitude then reached by man, 72,395 feet (22,065 meters). It sank 3,028 feet (922.9 meters) beneath the Atlantic in William Beebe's bathysphere, a record descent which held (like the ascent) for 20 years. An early Geographic expedition mapped 600 square miles (1,560 square kilometers) in Alaska and discovered Mount Logan, the highest mountain in Canada and second highest peak in North America. Another found, in Mexico, the oldest dated work of man uncovered in the New World, an engraved stone slab with a date interpreted as 291 B.C. In 1957, the Societ purchased Russell Cave in Alabama to preserve it for study, since a expedition there the year before had dug up a vivid record of successiv Indian cultures dating from 6200 B.C. In all, the National Geographi flag has accompanied 160 scientific expeditions—more than 100 of then outside the United States.

In its monumental Sky Survey, the Society probed even farthe one thousand million light years into space. This project took seve years and culminated in 1956 with the production of a sky atla containing 1,758 photographs that map three-fourths of the know universe—a volume of space at least 25 times larger than any befor charted. The nearest thing to a portrait of creation, the atlas ha altered mankind's entire concept of the universe. California Institut of Technology astronomers, who took the pictures with Palomar' 48-inch (122-centimeter) " Big Schmidt ' telescopic camera, discovere that our universe is probably twice as old (four instead of two thousan million years) and eight times as large as previously believed. The found new comets and asteroids, thousands of heretofore unknow clusters of galaxies, and thousands of millions of heavenly bodies. Th 100 copies of the atlas, now in use at the world's leading observatories will guide astronomers for perhaps a century to come.

Still other mapping and exploration projects go on at the dept of the world's oceans. National Geographic has brought together tw brilliant marine exlporer-inventors in Captain Jacques-Yves Cousteau co-inventor of the Aqua Lung, and Professor Harold E. Edgerton o the Massachusetts Institute of Technology. With grants from th Society, Dr. Edgerton built special deep-sea photographic equipmen which Captain Cousteau and his divers—and sometimes Edgerto himself—have used in underwater explorations from the ex-min sweeper, " Calypso." On one expedition in 1956, Edgerton took th deepest undersea photographs that had ever been made, in th Atlantic's Romanche Trench. Most of the film of *The Silent World* Cousteau's prize-winning motion picture, was made on a Society-sponsored expedition in the Indian Ocean. And Captain Coustea himself presented in the film's U.S. première on the National Geographi lecture platform in Washington.

Cousteau's pictures and narration typify the exciting fare th Society has always offered in its lecture series. Since 1888, these illustrated talks have been the best-attended feature of Washington' intellectual life. They are held in the city's largest hall and are always sold out. Audiences—including persons who have attended regularl for 40 years—have heard most of the world's famous explorers, many o its eminent scientists and statesmen as well as travellers, explorers and adventurers. They have heard Sir Edmund Hillary, who climbed Mount Everest, and George Leigh Mallory, who died in the attempt. They have heard explorers Admiral Byrd and Dr. Paul A. Siple, head of the U.S. Expedition to the Antarctic durnig the International Geophysical Year, and Justice William O. Douglas of the U.S. Supreme Court. To their surprise and amusement, they have even heard birds. Once a myna bird, accompanying an ornithologist lecturer, flew from the stage to the top of the hall and hovered there, calling, " Hello, darling, hello, darling."

Four American Presidents have appeared at the Geographic lectern, and William Howard Taft spoke there 10 different times. One legend has it that, coming on to the stage to read one of his speeches, Taft discovered he had left his spectacles at home. He turned to the audience and asked if anyone could lend him a pair. Users passed hats and in no time a small hill of eyeglasses lay before Mr. Taft. He tried several pairs for fit, found one that suited, and the program began.

The *Geographic* has an enviable reputation for being right. Before an article goes to press, every factual statement in it is checked and re-checked by a tireless team of researchers who often spend six weeks of concentrated work on a single article. One who labors under a sign reading, " Get it right or leave it alone; or the conclusion you jump to may be your own," recently radioed all the way to the South Pole to check a point.

The *Geographic's* sense of responsibility extends even to advertisements. Once when the Society received some letters from members complaining about a certain lawnmower which they had bought and which had been advertised in the magazine, the trustees cancelled the advertiser's contract and refunded to the members the cost of the offending lawnmowers.

Ever mindful of the many school children among its readers, the Society accepts no advertising of liquor or tobacco. The advertisements that do pass its screening average no more than one-fourth of the magazine's pages and appear only at the front and the back. But they seem to have appeal which lasts—for months and years. Not long ago an American shaving cream manufacturer received a letter from a man in England requesting a free sample, as advertised. The company made good on its offer, despite the fact that the advertisement had been clipped from a *National Geographic* dated December, 1922.

The placement of the advertisements permits their easy removal when the magazines are bound, and more copies of *National Geographic* are bound and kept for permanent reference than of any other magazine in the world. Nearly every U.S. library and thousands of homes and schools have complete sets which require more than 18 feet (5.5 meters) of bookshelf.

Teachers rely not only on the magazines but on the timely bulletins which the Society's School Service prepares especially for classroom use. These consist of bright little background essays on anything from Operation Deep Freeze in the Antarctic, to windmills in Holland, to the manufacture of pencils. They are similar to the bulletins which yet another arm of the Society, its News Service, sends out every week. The news bulletins, at least six a week, go to 2,300 newspapers, magazines and radio and television stations all over the world. Whenever a place pops into the news, editors know they can expect an interesting, authoritative Geographic bulletin on it. Like the magazine itself, the News Service takes a wide-angle view of geography. It may report on fish farming, the heartbeats of whales, the Cologne cathedral, or the world's tallest people (they live near the tidewaters of the White Nile). A recent bulletin scotched an old saw—" to eat lightly as a bird "—by revealing that a house wren had been seen to feed its young 1,217 times in 15 hours.

Newspaper editors lean so heavily on " good old reliable Geographic " that when representatives of the leading U.S. wire services met during World War II to decide on a uniform system of place-name spellings, they officially adopted National Geographic's nomenclature.

The war focused attention on the Society's maps. Wrote *The New York Times* : " The maps are to be found at the front, in the air, in our embassies and consulates, in business and newspaper offices, in schools. As a whole they constitute the most comprehensive atlas and gazetteer ever compiled." The same wall cabinet of National Geographic maps which hangs today near President Eisenhower's desk in the White House, was an indispensable part of his headquarters in the 1945 offensive across Europe. U.S. forces, advancing into Germany, found enlarged copies of a Geographic map to guide them at every road intersection. So accurate are the maps that, though not intended for such use, they *can* even aid navigation.

The National Geographic Society sends its members four or more new colored maps every year. Generously sized, for hanging on walls or placing under glass desk tops, these maps come folded up with the magazines. In addition, every travel article in the magazine is illustrated with small black-and-white maps.

In the six decades since Gilbert Grosvenor took over the magazine, scarcely an area of the globe has escaped National Geographic's mapping, photographing, or reporting. "Roaming the world with a hungry heart," the magazine has delved into such diverse subjects as aerodynamics, elephants and dragonflies, daily life in ancient Rome, housekeeping on Okinawa, hybrid maize in the United States, evidences of plant life on Mars, cancer in plants, medicine fakes and famous charlatans of all ages, weather prediction, Chinese Jews, golden eagles of Scotland, giant bears of Alaska, and the ethnic groups of Europe—the latter in an imposing survey written by Gilbert Grosvenor's twin brother, Edwin P. Grosvenor. Entitled "Races of Europe: The Graphic Epitome of a Never-ceasing Human Drama—The Aspirations, Failures, Achievements, and Conflicts of the Polyglot People of the Most Densely Populated Continent," it filled an entire issue.

The only limit to the magazine's broad interpretation of geography has been Grosvenor's insistence that everything printed must be both of permanent value and as timely as possible, that personalities and trivia are to be avoided as well as anything partisan or controversial, and that only what is kindly may be reported about any country or people.

Though Grosvenor retired from the editorship in 1954, his rules have been carried out to the letter by his successor, John Oliver La Gorce and, since La Gorce's retirement in 1957, by Melville Bell Grosvenor, Gilbert's only son. Having been brought up by these principles and nurtured on the knowledge of their unrivaled success (more than 80 per cent. of the Society's members renew every year), Melville Grosvenor can steer a clear course ahead. He has only to follow the way of Gilbert Grosvenor, the man who unmoored geography, sailed it around the earth into the homes of ordinary people, and united all in one global family

THE UPANISADS AND VEDIC RITUALS

BASANTA KUMAR CHATTOPADHYAYA

There are different sects among Hindus. But all of them declare that their doctrines are based on the Vedas. Hindus think that the Vedas were not composed by men, but were directly revealed by God and hence there cannot be any mistakes in the Vedas. In his commentary on Brahmasutra 1, 1, 3 Śaṁkara has quoted from the Bṛhadāraṇyaka Upaniṣad the following passage, **"अस्य महतो भूतस्य निःश्वसितम् एतद् यदृग्वेदोयजुर्वेदः सामवेदोऽथर्वाङ्गिरसः"** (Bṛ. U. 2. 4. 10). "The Rigveda, the Yajurveda, the Sāma Veda, the Atharva Veda are like the breath of the Supreme Being."

This is why the Vedas are held in the highest regard by all sects of Hindus.

Unfortunately, the way in which the Upaniṣads are taught in the modern Universities tends to undermine the faith of the students in the Vedas. They are taught that the Upaniṣads do not believe in the efficacy of the Vedic sacrifices nor in the existence of the Vedic gods. But as a matter of fact, nowhere in the Upaniṣads it has been said that Vedic sacrifices are inefficacious or that the Vedic gods do not exist. On the other hand, it has been clearly stated in many places in the Upaniṣads that by performing Vedic sacrifices one can attain heaven, and that Vedic gods do exist. Thus because of wrong teachings in modern Universities the students losefaith in the Vedas and therefore also in their religion.

I shall quote some passages from the principal Upaniṣads to show that the Upaniṣads refer to the existence of Vedic gods, assert that by performing Vedic sacrifices one can go to heaven and enjoin that such sacrifices should be performed.

The Iśopaniṣad contains a prayer to the god of fire to lead the departing soul by a good path—**अग्ने नय सुपथा राये अस्मान्** (Iśa U. 18).

The Kenopaniṣad says that the gods of fire and air failed to have a knowledge of Brahman and that Indra was taught the nature of Brahman by the goddess Uma. It also says that the knowledge of Brahman is based on austerities, self control and rituals.

तस्यै तपो दमः कर्मेति प्रतिष्ठा

(Ke. U. 4.8)

In the Kaṭhopaniṣad we find that the god Yama, teaches Naciketā the method of worshipping the god of fire so that one may attain heaven. Yama also says that out of fear of Brahman the gods of fire and the sun give heat, and Indra and the gods of air and death perform their respective functions.

भयादस्याग्निस्तपति भयात्तपति सूर्यः ।
भयादिन्द्रश्च वायुश्च मृत्युर्धावति पंचमः ॥

(Ka. U. 2.3. 3)

The Praśnopaniṣad says that those who perform **Vedic sacrifices** or dig tanks and wells attain the heaven which is in the moon. तद्ये हवै इष्टापूर्त्ते कृतमित्युपासते ते चान्द्रमसमेव लोकमभिजयन्ते । (Pra. U. 1.9) The Taittiriya Upaniṣad says that one must not neglect to perform the Vedic sacrifices and the worship of ancestors.

देवपितृकार्याभ्यां न प्रमदितव्यम् ।

(Tai. U. 1.11.2)

The Chāndogya Upaniṣad says that there are three sections of dharma, the first section consisting of Vedic sacrifices, study of the Vedas and gifts.

त्रयो धर्मस्कन्धाः यज्ञोऽध्ययनं दानमिति प्रथमः ।

(Chā. U. 2, 23. 1)

The Bṛhadāraṇyaka Upaniṣad says that the Brahmins desire to know Brahman by the recitation of the Vedas, performance of Vedic sacrifices, gifts and austerities performed without any desire for their fruits.

तमेतं वेदानुवचनेन ब्राह्मणाः विविदिषन्ति यज्ञेन दानेन तपसाऽनाशकेन ।

(Br. U. 4. 4. 22)

The references to the Vedic gods which are found in the Upaniṣads are too numerous to be mentioned in their entirety.

There is one passage in the Upaniṣads which is often relied upon by those who think that the Upaniṣads condemn the performance of sacrifices. It runs thus:

प्लवाह्येतेऽदृढा यज्ञरूपाः * * *
एतच्छ्रेयो ये प्रवेदयन्ति मूढा
जरामृत्युं ते पुनरेवापि यन्ति ।

(Mu. U. 1, 2, 7.)

"The Vedic sacrifices are like frail crafts Those ignorant persons who consider them to be the best become again subject to old age and death." All that is said here is that by performing Vedic sacrifices one cannot attain emancipation. It is not denied here that one can attain heaven through sacrifices. In fact, it has been said after three verses in the same Upaniṣad that those who perform sacrifices enjoy the fruits thereof in heaven and then are born again. **नाकस्य पृष्ठे ते सुकृतेऽनुभूत्वेमं लोकं हीनतरं वा विशन्ति** (Mu. U. 1. 7. 10)

They have been called ignorant because they consider sacrifices the best thing in the world, although sacrifices do not give emancipation. It should not be inferred from Muṇḍaka Upaniṣad, 1. 2. 7 quoted above that it is the intention of this passage that sacrifices should not be performed because it has been said six verses earlier in the same Upaniṣad that Vedic sacrifices should be performed. The relevant passage is quoted below.

तदेतत् सत्यं मन्त्रेषु कर्माणि कवयो यान्यपश्यन् * * तान्याचरथ निय
सत्यकामाः * * (Mu. U. 1, 2, 1) .

"All this is true,—the rituals that the sages saw in the Ma
You should constantly perform them with the desire of atta
Brahman." Not only the Vedic mantras, but also the metho
performing sacrifices with the help of those mantras, were revea
to the ṛṣis. These rituals are all true. They should be regularly performed with the desire of attaining Brahman (this is how the passage has been explained according to Ramanuja's view). The idea is that performance of Vedic passages involves a course of self discipline (fasting, recitation with correct pronunciation, concentration of the mind etc.). If they are performed without the desire of attaining heaven they purify the mind and render it fit for the realisation of Brahman. It is thus quite clear that the passage **प्लवाह्येतेऽदृढा** etc. (Mu. U. 1. 2. 7) does not justify the conclusion that according to the Upaniṣads Vedic sacrifices are inefficacious or that they should not be performed.

I shall now quote the passages from the writings of Western scholars to show that they really hold the views which I have attributed to them. In the light of what has been said above it will be clear that their views are wrong.

Max Muller writes : "In these Upaniṣads, the whole ritual or sacrificial system of the Vedas is not only ignored but directly rejected as useless, nay, as mischievous. The ancient gods of the Vedas are no longer recognized" (Origin ofVedanta, p. 11).

Deussen writes : "The Atman doctrine (*i.e.*, the main doctrine of the Upaniṣads) is fundamentally opposed to the Vedic cult of the gods and the Brahmanical system of ritual" (Religion and Philosophy of the Upaniṣads, p. 2˙).

Prof. Macdonell writes : "Though the Upaniṣads generally form a part of the Brahmanas they really represent a new religion which is in virtual opposition to the ritual or practical side" (History of Sanskrit Literature, p. 125).

Dr. Winternitz writes : ("While the Brahmins were pursuing their barren sacrificial science, other circles were engaged upon those highest questions which were at last treated so admirably in the Upaniṣads. From these hermits, who were not originally connected with the priestly caste, proceeded the forest hermits and wandering ascetics" (History of Sanskrit Literature p. 237).

Garbe writes that the Brahmin priest is proficient only at "excogitating sacrifice after sacrifice, and hair-splitting definitions and explanations of senseless ritualistic *hocus pocus*. All at once lofty thought appears on the scene. A passionate desire to solve the riddle of the universe and its relation to one's own self holds the mind captive".

Hertel says, "The Kṣattriyas unable to believe in the Vedic gods, substituted instead the idea of nature powers and propounded a philosophy which was essentially a monism, atheistic, materialistic and morally indifferent."

Dr. Robert Ernest Hume writes : "No longer is worship or sacrifice or good conduct the requisite of religion in this life or of salvation in the next. Knowledge secures the latter and disapproves the former. The whole religious doctrine of different gods and of the necessity of sacrificing to the gods is seen to be a stupendous fraud by the man who has acquired metaphysical knowledge of the monistic unity of the self and of the world in Brahman or atman" (The Thirteen Principal Upaniṣads p. 53) .

Again Dr. Hume writes : sacrifice and works of merit towards hypostatized divinities are, in the light of metaphysical knowledge, seen to be futile (*Ibid.* p. 54).

Modern Indian scholars should have pointed out the mistakes made by Western scholars. Instead of doing so they have repeated the wrong views expressed by the Western scholars.

Thus Prof. Hiriyanna writes: "The Upaniṣads primarily represent a spirit different from, and even hostile to, ritual and embody a theory of the universe quite distinct from the one that underlies the sacrificial teaching of the Brahmanas (Outlines of Indian Philosophy, p. 48).

Dr. S. N. Dasgupta writes: "The Upaniṣads are an entirely different type from the rest of the Vedic literature as indicating the path of knowledge (Jñāna-mārga) as opposed to the path of work (Karma-marga). The Upanisads do not require the performance of any action but only reveal the ultimate truth and reality." (History of Indian Philosophy, p. 28).

The path of knowledge is not opposed to the path of work. On the other hand, the path of work leads to the path of knowledge. The Upaniṣads do require the performance of acts (देवपितृकार्याभ्यां न प्रमदितव्यम्—Tai. Up. 1.11.2).

Prof. R. D. Ranade writes: "The spirit of Upanisads is, on the other hand, barring a few exceptions here and there, entirely antagonistic to the sacrificial doctrine of the Brahmanas" (Constructive Survey of Upanisadic Philosophy, p. 6).

The Upaniṣads require the performance of sacrifices for the purification of mind. What Prof. Ranade has stated to be exceptions is the general rule.

Sir S. Radhakrishnan writes regarding the origin of the Upaniṣads, : "Men sat down to doubt the gods they ignorantly worshipped and reflected on the mysteries of life. From primitive polytheism to systematic philosophy it is a long, long way" (Indian Philosophy, Vol. I, p. 71-72).

As stated above the Upaniṣads say that the Vedas were revealed by God. They regard the Saṁhitās with great veneration and not as the product of ignorance. If the Saṁhitās are polytheistic the Upaniṣads also are polytheistic as both Saṁhitās and Upaniṣads refer to the existence of minor deities as well as the Supreme God.

Dr. Radhakumud Mukherjee writes: "Indeed the Upaniṣads really expound a new religion which is opposed to the sacrificial ceremonial" (Hindu Civilization, p. 118).

Sir R. G. Bhandarkar in his Vaiṣṇavism, Saivism and other Minor Faiths traces the origin of the Upanisads to disbelief in Vedic rituals.

These wrong theories are taught to the students who lose their faith in the Vedas and therefore in their religion.

ROLE OF THE JUDICIARY IN A FEDERAL UNION

A THEORETICAL STUDY

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The Judiciary is what it does. Varied and comprehensive as its functions are, they are not associated with governments irrespective of any sort of classification. Although in a high sense, generally speaking, it is the guardian of the conscience of the people as well as the law of the land,[1] judicial function is largely an incidence of the type or character of a government or a constitution.

In the context of a federal constitution, judiciary has a role which is peculiar, and in some sense, unique. The significant and important role that the judiciary plays in a federal constitution lends to it an importance and a dignity which are striking.

A strong, impartial, and independent judiciary is an indispensable and essential element in a federal constitution. It is, so to say, "the conscience" and the "balance-wheel" of a federal constitution, the very life-blood of it.

A federal state, as Dicey says[2], is a political contrivance intended to reconcile national unity with the maintenance of a state-rights. It is a union of a number of independent (as in the U.S.A.) or autonomous (as in Canada) states, the common affinities and the desire for national unity of which draw them together, but which are at the same time, very anxious to maintain the separate identity and independence of themselves. It is an organic union, and a new organic state is created by the association of the different independent or autonomous units for the discharge of certain national functions. The foundations of a federal state, as Dicey says[3], are a complicated contract. This compact contains a variety of terms, which have been agreed upon, and generally after mature deliberation, by the states which make up the federation, with a view to facilitating the regulation of the central-state relationship. To base an arrangement of this kind upon understandings and conventions would be certain to generate misunderstandings and disagreements. The constitution must, therefore, be a written document with very little scope of ambiguity.

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[1] William O. Douglas—Tagore Law Lecture (1939) : From Marshall to Mukherjee—Studies in American and Indian Constitutional Law, Ch. XII.

[2] A. V. Dicey—Introduction to the study of the Law of the constitution 9th Edn.—p. 143.

[3] Dicey—*Ibid*—p. 146.

The constitution needs also be rigid, because a federal constitution partakes of the nature of a treaty, and the sanctity of this treaty must be maintained by making difficult swift changes in any generally simple manner in which statutory enactments are made or changed.

The constitution, therefore, is endowed with the status of the supreme law of the land, and every power, executive, legislative or judicial, is subordinate to, and controlled by the constitution. This is a peculiar characteristic of the federal form of government, like that of the U.S.A., whereas in Great Britain, we do not hear of constitutional, but legislative supremacy.

This is as it should be, for one of the most important features of a federal form of government is the demarcation of powers between the central government and the federating units, and the source of this division is the constitution itself. The maintenance of this scheme of division of powers requires that the sanctity of the constitution itself ought to be maintained.

A composite government with a division of powers entails inevitable conflicts. There is plenty of possibility that disputes will crop up between the central government and the federating units on the one hand, and among the federating units themselves as regards their respective rights and spheres of action. This is not a mere theoretical possibility, but, as the history of the major federations of the world, notably the national-state conflicts in the U.S.A., shows[4], a feature of common occurrence. There must, therefore, be some organ independent both of the federal legislature and executive and of the governments of the units, the basic function of which will be to interpret the constitution impartially and to adjudicate upon any disputes of the nature described above, and thus to maintain the equilibrium between the contracting parties. According to Prof. K. C Wheare, an eminent authority on federalism, "Since a division of powers is an essential part of any federal government, since any such division must be expressed in words whether written down or not, and since language is ambiguous, it is certain that in a federation there will be disputes about the terms of the division of powers. But since it is the criterion of a federal government not merely that there should be a division of powers, but also that this division should not be dependent upon the general government or the regional governments alone, it follows that the last word in settling disputes about the meaning of the division of powers must not rest either with the general government alone, or with the regional governments alone[5]". Political theory and political practice have vested this final authority on the judiciary. As the Joint Parliamentary Committee has observed[6]; "A Federal Court is an essential element in a Federal constitution. It is at once the interpreter and guardian of the constitution and a tribunal for the determination of disputes between the constituent units of the Federation".

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[4] Any book on case-law will convince the reader to what extent national-state conflict is a reality in the political life of the American federation.

It is pertinent to point out that this function of adjudication is not associated with a Unitary constitution like that of England, the dominant features of which are the overall supremacy of the central government on the one hand, and the absence of "subsidiary sovereign bodies' (as C. F. Strong puts it) or autonomous units as in a federation. The local administrative or legislative bodies being mere subordinate bodies under the central authority, no problem of adjudication of disputes crops up.

In this connection we can cite the opinion of the Supreme Court of the U.S.A. in the case of Hammer V. Dagenhart[7]: "This Court has no more important function than that which devolves upon it, the obligation to preserve inviolate the constitutional limitations upon the exercise of authority Federal and state, to the end that each may continue to discharge harmoniously with the other, the duties entrusted to it by the constitution." Thus the judiciary is vested with a quasi-arbitral function between two centres of diverse, if not essentially equal powers. We have to take note of the fact that federalism, for better or worse, involves legalism, and that "the sheer fact of Federalism enters the purview of Constitutional Law, that is, becomes a judicial concept, in consequence of the conflicts which have at times arisen between the idea of state autonomy ('state sovereignty') and the principle of National Supremacy." [8] In the arresting language of Chief Justice Taney in the case of Ableman V. Booth,[9] "This judicial power was justly regarded as indispensable, not merely to maintain the supremacy of the laws of the United States, but also to guard the states from any encroachment upon the reserved rights by the general government...... so long... as this constitution shall endure, the tribunal must exist with it, deciding in the peaceful forms of judicial proceeding, the angry and irritating controversies between sovereignties, which in other countries have been determined by the arbitrament of force." [10]

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[5] K. C. Wheare- Federal Government.

[6] Report of the Joint Parliamentary Committee on Indian Reforms—Vol. I, Part I.

[7] Hammer V. Dagenhart (1918)--247 U.S. 251.

[8] "The Constitution of the United States of America—Analysis and Interpretation"—Prepared by the Legislative Reference Service, Library of Congress—Editor, E. S. Corwin —p. XII.

[9] 21 How. 506, 520-521 (1859).

The propriety of vesting this function in the judiciary—which is just one branch of the general government—to decide upon the limitations of the legislative and the administrative branches seems strange logic to many, particularly in the context of a country which has adopted the principle of separation of powers, because, that, it is contended, will nullify the 'separation' principle and will in effect usher in an era of judicial supremacy.

Factors of governmental expediency and administrative efficiency however, negative this contention. Surely, we should not be too much prejudiced by the working of the judiciary in the United States, where, to all intents and purposes, the inevitable outcome has been a "government by judges." For one thing, the exercise of adjudicating functions by a federal judiciary is supported both by the negative consideration of the inadvisability of the other two department-of government, legislative and executive, to perform this function, and also, by the positive consideration of the eminent fitness of the judicial branch to fulfil this mission.

The legislative branch of government is ill-fitted for the task by virtue of the fact that it is mostly a large body with a political colour with passions going high among its numerous elected members who can have least claim to 'impartiality' and 'independence,' the two basic qualities necessary for an organ saddled with the great responsibility of the guardianship of the supreme law of the land. Moreover, were it to be permitted, in effect, to amend the basic law by the simple process of enacting contradictory or incompatible laws, the distinction between constitutional and statute law would disappear, and with it would pass away the written constitution as a pattern of government. A popularly elected legislature, in its 'zeal' for passing laws, tends to expand or distort its authority beyond the grant of power in the constitution. The Executive, likewise, is disqualified because of the political character of the office. By training, temperament, and customary nature of their work, the judiciary is supposed to be the best fitted for this delicate and important task.

Thus, "while it is the duty of every institution established under the authority of a constitution and exercising powers granted by a constitution, to keep within the limits of these powers, it is the duty of the Courts .... to say what these limits are. And that is why courts come to exercise this function in a federal government.''[11]

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[10] Quoted from Corwin—op. cit.

However, it must not be taken for granted that this function of the judiciary is strictly confined to countries with a federal government. In the U.K., where a unitary form of government obtains, the courts have power of saying what should be the limits of power of the governmental institutions, local in character.

A second qualification should also be noted. It is generally assumed that the judiciary should have the last word in regard to the meaning of the division of powers in a federation. This is controverted by some who hold that what is essential for federal government is that some impartial body, independent of both the parties to a federation, should decide upon the matter. This qualification, however, is of mere theoretical importance, as, the U.S.A. practice has established the claim of the judiciary alone in this regard and that judicial organ is, to all intents and purposes, one of the central government.

The judiciary is also called upon to solve the problem of inter-state disputes which may frequently arise in a federation. Through successive disputes and decisions the judiciary may build up what may not improperly be called ''inter-state common law.'' It, therefore, imposes some uniformity in a field which, under the federal constitutions, is mostly left to be regulated by the states.

Thus it is in the ''nice poise and balance of political forces'' that the need for a federal judiciary becomes manifest, and it goes without saying, that in this respect, its decisions are sure to exercise a far-reaching influence.

We now come to judicial Review, *i.e.*, the authority of the courts to interpret finally provisions of the constitution, and, as a consequence, to invalidate legislative acts in conflict therewith. Although it follows as a natural and necessary corollary to the primary function of the maintenance of 'equilibrium' which has been dwelt already in this paper, a separate and detailed discussions of the doctrine of judicial review is necessary by virtue of its unique operational mode and its distinguished career through the United States history, legal and political. Apart from the general argument that judicial review of legislation results in the settlement of matters of constitutional interpretation in the dry, mechanical and impartial atmosphere of a court instead of under the partisan turmoil of the political forum, the doctrine has found support for its necessity to preserve the essential features of a federal government, to preserve individual liberties against the rule of the majority and to protect individuals and groups against invidious attacks by public officers or departments of the government.

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[11] .K. C. Wheare—op. cit.

This function of the judiciary, particularly in the context of a federal constitution, can best be understood by reference to the constitutional law of the U.S.A. Since its adoption more than a century ago, the doctrine of judicial review has been defended as an indispensable feature of the American system of government. It was held that "the integrity and duration of the government depended upon the faithful performance of this high duty." [12] This opinion, which was frequently advanced in the beginning of judicial review, was put into eloquent language by Daniel Webster, when he said :

"No conviction is deeper in my mind than that the maintenance of the judicial power is essential and indispensable to the very being of this government. The constitution without it would be no constitution ; the government no government." [13]

To this was added the testimony of an English writer, Prof. Dicey, who believed that a federal system demanded some such power as that exercised by the federal supreme Court, and that, "the glory of the founders of the U.S. is to have devised or adopted arrangements under which the constitution became in reality as well as in name the supreme law of the land" [14] ; and it needs be added that to Dicey the legal supremacy of the constitution is essential to the existence of the states under a federal system.

Chief Justice Marshall's reasoning is still at the base of review by Courts. We are led to his assertion, in the famous case of Marbury V. Madison [15] in 1803, that "if a law be in opposition to the constitution, and the constitution is superior to any ordinary act of the legislature, the constitution, and not such ordinary act, must govern the case to which they both apply." The conclusion, according to him, is inescapable, that a law, repugnant to the constitution, is void, and the courts, as well as other departments, are bound by that instrument. We may also profitably note the classic expression given by Alexander Hamilton in "The Federalist" :—[16] "The interpretation of the laws is the proper and peculiar province of the Courts. A constitution is, and must be, regarded by judges as a fundamental law. It must therefore belong to them to ascertain its meaning, as well as the meaning of any particular act proceeding from the legislative body. If there should happen to be an irreconcilable variance between the two, that which has the superior obligation ought of course to be preferred; in other words, the constitution ought to be preferred to the statute, the intention of the people to the intention of their agents." We can refer also to Justice Story who says, referring to clause 2 of Article 6 of the constitution of the U.S.A.[17]: "From this supremacy of the constitution and laws and treaties of the U.S., within their constitutional scope, arises the duty of courts of justice to declare any unconstitutional law passed by Congress or by a state legislature void. So, in like manner, the same duty arises whenever any other department of the national or state governments exceeds its constitutional functions." He also says:—"The power of interpreting the laws involves necessarily the function to ascertain whether they are conformable to the constitution or not; and if not so conformable, to declare them void and inoperative. As the constitution is the supreme law of the land, in a conflict between that and the laws, either of Congress or of the states, it becomes the duty of the judiciary to follow that only which is of paramount obligation."[18] And lastly, we cannot conceivably by-pass the emphatic, or, should it be said, the rather blunt assertion by Mr. C. E. Hughes: "The constitution .... is what the judges say it is."[19]

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[12] Lindsay V. Charleston Commission , 2Bay 38, 61 (1796).

[13] Webster—Works, 3 : 176.

[14] A. V. Dicey—Introduction to the study of the Law of the Censtitution (Ninth Edition).

[15] 1 Cranch 137, 2 L. Ed, 60 (1803).

[16] "Tne Federalist," No. 78.

Opinions may be cited 'ad infinitum,' but those given above will surely go to show that judicial review as a very important function in a federal system has been accepted by the leading constitutional lawyers and theorists, particularly of the U.S.A., which is regarded as the model federation and the home of the doctrine of judicial review. Surely, we cannot escape from many of the criticisms that are put forward relating to this doctrine, like that judicial review, instead of protecting and preserving individual liberties and keeping them beyond the pale of governmental interference, has resulted in some cases in the curtailment of the same, and that, in the exercise of this special function the judiciary becomes involved in the great political questions that divide the people.[20] However, most of these criticisms relate to aspects other than those strictly within the purview of a federal structure, and are not indicative of the manifest incapacity of this branch to maintain the supremacy of the 'law of the land.' One criticism, which has certain amount of validity in this context, relates to the fact that the judiciary,—or, to be precise, the federal courts—have not been the chief defenders of the American system of government, that it is a well-known fact that there has taken place—imperceptibly at times—an almost continuous encroachment on the powers of the states on behalf of the national government —a process of absorption of powers under the cloak of the famous 'Implied Powers' doctrine, which in the main has received the approval of the American Supreme Court.

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[17] Joseph Story—Commentaries on the Constitution of the U.S., 4th Edition, 1873, Vol. II, Sec. 1842.

[18] *Ibid.*

[19] C. E. Hughes—"Addresses" (New York, 1908), 139.

[20] C. E. Beard—American Government & Politics (10th Edition).

It seems, however, that the mere fact of a partial abuse by a handful of politically-minded judges does not in any sense absolutely impair the essential quality of the doctrine, which has, by the fact of its sheer continuance till this day, and by virtue of the supposed superiority of the 'men in robes,' has embedded itself into the heart and soul of the entire American constitutional structure. To all intents and purposes, the judiciary has proved its 'raison d'etre,' and in a country governed by the principle of the supremacy of the constitution, it has undisputed value which has been proved beyond any shadow of doubt.

Certain confusions have, however, to be guarded against. This role of the judiciary is supposed, in the opinion of some, to come as a natural corollary of the 'writtenness' of the constitution. This opinion gets its emphatic assertion in the judgment of Marbury *V.* Madison, in which Chief Justice Marshall uttered: "Certainly all those who have framed written constitutions contemplate them as forming the fundamental and paramount law of the nation, and consequently, the theory of every such government must be, that an act of the legislature, repugnant to the constitution, is void. This theory is essentially attached to a written constitution, and is consequently to be considered by the court, as one of the fundamental principles of our society."[21] The last sentence is to be noted. Expert opinion on this matter, however, seems to be that what is of essence in Marshall's judgment is the emphasis, direct or indirect, on the supremacy of the constitution.[22] The written nature of a constitution is, in the opinion of Prof. Dicey, one of the consequences of constitutional supremacy, and is supposed to be "no deeper than a political expediency." That written constitutions with defined limitations do not inevitably require judicial review is apparent since a majority of the countries of the world which have written constitutions do not allow their courts to exercise this extraordinary power. Switzerland is one such country. Judicial review of federal acts is conspicuous by its absence here. To Prof. C. G. Haines, therefore, this claim seems to be disproved [23] by the experience of countries with written constitutions. In fact, the 'writtenness' or 'unwrittenness' of a constitution does not matter, because, to quote the language of C. F. Strong,[24] "there is no constitution which is entirely unwritten and no constitution entirely written." All constitutions are more or less written, more or less unwritten. The British constitution, though supposedly made up of custom and tradition, is partly written [E.g. Magna Charta, Petition of Rights, Bill of Rights, Parliament Act of 1911, etc.]. Similarly, the written constitution of the U.S.A. is only the original trunk. Important new branches have been added in the shape of customs and traditions, and the so-called 'usages.'

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[21] See Charles Fairman—American Constitutional Decisions, Revised Edn., p. 22.

[22] Prof D. N. Banerjee in his article entitled "Position of the Resident of India" in "The Modern Review," May 1951, pp. 365 ff.

Thus judicial Review is an implied, not a substantive power ; it is implied from, and incidental to, the court's judicial power—the power to interpret law and decide cases. Under Chief Justice Marshall's theory, judicial review is less a necessary adjunct to the written constitution than a supplement to popular government and supremacy of the constitution.

Scarcely less important is the role which the judiciary is called upon to play in mediating disputes between the individual and the government. In the federal constitution in which the fundamental rights of citizens are declared and guaranteed and remedies against interference with their exercise and enjoyment are provided through the judiciary, the latter is constantly called upon to determine the validity of legislation and of executive action with reference to the provisions relating to the fundamental rights. On the judiciary will fall the delicate and difficult task of ensuring to the citizen the enjoyment of his guaranteed rights consistently with the rights of society and the state.

Thus in its multipurpose role in a federal structure—interpreter and guardian of the constitution, the umpire who maintains balance and conducts the game of politics in a smooth, and impartial way, the final and ultimate depository of the trust of the citizens in the enjoyment of their rights and liberties, and the balance-wheel of the constitution—the judiciary assumes a position of pre-eminence and prestige which is not affected inspite of the many practical limitations connected with its working. Above everything else, we should bear in mind two considerations—that the judges are human beings and infallibility is not the essential quality of human beings, and that a federation is a complicated arrangement, a delicate balance, a product of a contingent situation.

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[23] C. G. Haines—American Doctrine of Judicial Supremacy.
[24] C. F. Strong—Modern Political Constitutions (1949).

THE PHENOMENOLOGY OF EDMUND HUSSERL[1]

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I

Intelligibility as meaning the capacity of being grasped by the mind in terms of first-hand experience has been the avowed aim of many a philosophic endeavour. But it is often found that different philosophies, in their respective criticisms of experience, have outstepped the realm of intelligibility, in the interest of metaphysics. Thus, empiricism (as in Locke) turned into conceptualism, beyond the experienceable region; rationalism (as in Descartes), with its tool of clear and distinct perceptibility, landed into 'dogmatic' metaphysics. Hegelianism, again, presents a panlogistic system, where Reason is the metaphysical *prius*. The speculative character in Hegelianism clearly subordinates the element of experience.

The anti-speculative, Kantian trend in philosophy, however, assumes quite a different attitude in philosophizing. The enquiry into presuppositions, principles and method of knowledge was sought to be taken up in right earnest. A new attempt towards an autonomous body of analysis of knowledge thus made its way. In this context we propose to review in this paper the general position of the school of Phenomenology, offering to work out a new philosophical discipline.

'Phenomenology' of Husserl has as its aim 'a completely understanding philosophy'[2] which proposes to take an account of experience at first hand. A philosophy which should be thoroughgoing in its analysis of experience and itself be independent of presuppositions, is attempted by it.

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[1] Edmund Husserl (1859-1938) : A leading figure in twentieth century German philosophy, he is recognised to be the founder of phenomenology as a new philosophical discipline —a methodology and a mode of analysis. Among his works are : *Logische Untersuchungen* (Logical Investigations) ; *Ideas* ; *Experience and Judgment.*

The account of Husserl's Phenomenology given here is chiefly based on his thoughts contained in the 1st volume of his 'Ideas".

[2] Marvin Farber, "Phenomenology", *Twentieth Century Philosophy*, ed. by D. D. Runes.

II

Phenomenology is primarily a study of psychical phenomena—the science of the manifestations of consciousness. It is an enquiry into the nature of types of mental functioning. Now, such a primary definition of phenomenology no doubt brings it close to psychology. So, the distinction of one from the other is to be considered at the outset. This may best be done by showing the difference between psychological and phenomenological descriptions of inner experience—both being apparently concerned with the same subject-matter.

There is two-fold difference between the two studies which would be more evident by reference to the characteristics of psychological investigations. (*a*) Psychology is a science of *facts*, of events which are presented to us; (*b*) it is a science of *realities*. The phenomena dealt with in psychology are *real* events—empirical, worldly and spatio-temporal. The psychological events as belonging to (empirical) subjects are co-eval with the facts of the spatio-temporal world.

In contrast to these characteristics, firstly, phenomenology seeks to be a science of ' essential being ' and not of facts. Here ' essences ', and not facts, form the subject-matter. Secondly, the contents of phenomenological investigations can be characterized not properly as ' real ' but rather as ' non-real '.[3] Reality, in the usual sense of existentiality, is not here in question. The distinction between the psychological point of view and the phenomenological has been repeatedly stressed by Husserl. In psychology, the mind is directed upon experience as the natural attitude dictates, that is, upon some inner state of mind as a *natural event*. The phenomenological point of view, on the other hand, concerns itself with the autonomous region of pure consciousness as disconnected from the natural order.[4]

In passing from empirical psychology to pure phenomenology, we come to an intermediate discipline which has been called ' phenomenological psychology '. The latter should not, however, be confused with pure or ' transcendental phenomenology ' with which we are here directly concerned, though both presuppose the same descriptive methodology broadly denoted by the name of ' phenomenology '. As Husserl himself puts it, phenomenological psychology is " an *a priori* psychological discipline, able to provide the only secure basis on which a strong empirical psychology can be built ".[5] Of course, this itself was a departure from empirical psychology, inasmuch as it was reflective in method. That means a reversion of the ordinary attitude with a view to concentrating upon the psychical 'act of experience' in which the features of mental life are apprehended. Thus, its task is to systematically examine the types and forms of experience which imply directedness on the part of consciousness towards something, or in other words, which are 'intentional'. This is the comprehensive task that Husserl set for himself in "Logical Investigations", where phenomenology is conceived as a subdomain of Psychology—as dealing with 'immanent descriptions of psychical events'.

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[3] Edmund Husserl, *Ideas : General Introduction to Pure Phenomenology*, trans. by B. Gibson from the German original, Library of Philosophy, p. 44.

[4] *Ibid*, p. 166.

[5] Husserl, "Phenomenology", *Encyclopedia Brttannica*, Vol. 17, 14th edition, pp. 699f.

Phenomenology of this earlier stage had a two-fold function. It provides, on the one hand, a basis for empirical psychology, and, on the other, the 'sources' out of which the fundamental concepts and the ideal laws of pure logic arise. In thus seeking to retrace logical concepts and laws to their epistemological genesis, it is regarded as equivalent to epistemology. But, 'transcendental' or 'pure' phenomenology supersedes phenomenological psychology. The former aims at constructing such philosophy as can provide the basis for a systematic revision of all the sciences. After all, psychology, even if it be 'intentional' or 'eidetic', can hardly be purged of empirical associations. It is certainly not clear, as Husserl himself admits,[6] whether the investigations of a phenomenological psychology are 'free from all psycho-physical admixture'. Self-consciousness in psychology is hardly conceivable without connexion with external events and non-psychical realities.

The phenomenological procedure in psychology, in finding out the essential forms implied by psychical phenomena, of course, paves the way towards transcendental phenomenology in the latter's analysis of the fundamental structure of pure consciousness. Husserl's "Logical Investigations" prepared the ground for transition to his phenomenology proper in two respects. On the one hand, the *psychologistic* theories which sought for the empirical-psychological foundation for logical methodology was refuted; and consequently, the empirically subjectivistic epistemology was rejected. On the other hand, the descriptive-psychological explanation of the structure of experience was introduced. The latter led to a new epistemological outlook which gave rise to the phenomenological procedure in terms of 'essence' as ideally presupposed by pure experience.

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[6] *Ibid.*, p. 700.

III

Now, let us examine the phenomenological standpoint more closely. What primarily characterizes the approach of phenomenology is the radical alteration of the *natural* standpoint. From the natural standpoint of the man-in-the-street, the world of facts in an independent spatio-temporal system is presented to the subject; and the subject himself also belongs to that world. Our natural experience, uninterfered by reflection, involves the character of existentiality. What the phenomenologist proposes is an attitude of suspense with regard to the existential reality admittedly pertaining to the objects of experience.

The method of doubt, as Descartes tried it, is applied, but with a different end in view. In phenomenology, unlike in Cartesianism, doubt does not necessarily lead to a system of indubitable metaphysical truths. It would rather provide a methodological device through which certain things are brought to clear light. Systematic doubt of the thesis yielded by the natural standpoint, conditions a ' suspension ' of the thesis. And the latter would consequently undergo a transformation which can be far-reaching. Such transformation, however, differs from the negation or denial of the thesis. The latter is rather disconnected or ' bracketed ', no use in knowledge being made of it. The outer object would remain, but as disconnected, so far as any judgment concerning its actual existence is subjected to a suspension. This suspense of the natural cognitive attitude, leading to necessary dissociation, is what is meant by phenomenological ' epoché '. Through this a realm of disconnected consciousness is sought to be obtained.

Now, such phenomenological method is markedly *subjectivistic*, proceeding as it does with the findings of a self reflecting ego. The subjective attitude is admittedly adopted through a suspense of the objective attitude which seeks to posit natural objects and even metaphysical realities. For, the ideal of a transparent methodological enquiry, which would be altogether free from any assumptions and theorizing, can be answered only by a method directed to the experiencing subject and its first-hand evidence within the range of experience.[7]

Husserl would, however, sharply distinguish the *pure* subjective method of phenomenology from the spuriously subjective approach of 'psychologism'. As already pointed out, Husserl rejected psychologism in favour of the *logical* status of idealities. The ' ideal ' modes of reason enjoy validity of their own, independent of facts, mental or non-mental, and thus comprises the realm of pure logic.

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[7] *Cf* "Turning inwards in pure reflexion, following exclusively 'inner experience' and setting aside all the psychophysical questions which relate to man as a corporeal being, I obtain an original and pure descriptive knowledge of the psychical life as it is in itself, the most original being obtained from myself, because here alone is perception the medium " Husserl, *Ideas*, Preface.

The principle of ' transcendental subjectivity ' as distinguished from ' psychological subjectivity ' is to be closely noted in this connection. Psychological subjectivity is the subjective counterpart in the complex situation involving the non-mental, objective factor as well. It comes to us as on the same level with the data of external experience. As such, it is relative, variable and necessarily empirical in nature. Transcendental subjectivity, on the other hand, is not to be grasped under the attitude of empirical psychology. For, it is no part of the world to which ' I ' or ' we ' of common import and use, as well as the objects said to be related to such ' I ' and ' we ', belong. It is rather the ' subjective conscious life itself ' as referred to which the contents of experience do subsist. Thus, even the empirical ego has as its presuppositional background the fundamental, inner subjectivity to which it is present.[8] Hence, the peculiar relation between the two can be understood neither in terms of difference nor of identity.[9]

IV

Thus, phenomenology as ' transcendental idealism ' is to be understood as the theory from the standpoint of transcendental subjectivity. Its distinction from subjective or psychological idealism can hardly be overlooked. Any ' psychological ' or ' anthropological ' idealism implies that the world is somehow dependent for its existence on some consciousness-in-the-world. As such, it would plainly come in conflict with the phenomenological contention as regards the ' intentional objectivity ' of the contents of experience.

The sphere of consciousness as an autonomous region, disconnected from the world of existent facts, is the target of phenomenological investigation. Husserl, in fact, proposes ' a certain general insight into the essence of consciousness in general ' as prior to the phenomenological analysis proper [10] (though what exactly Husserl means here is not quite clear). Consciousness, as providing the theme of phenomenological enquiry, stands *prima facie* for conscious experience, taken as the stream of experience. But, the ideal of pure consciousness as substantive and autonomous (as, for instance, in Advaita Vedanta), is defined by Husserl in terms of " phenomenological residuum ". No further commitment is made with regard to its actual nature. It is only admitted that such supposed pure consciousness has the possibility of remaining unaffected in its ideal being by phenomenological disconnexion.[11]

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[8] *Cf.* "The 'I' and 'we' which we apprehend, presuppose a hidden 'I' and 'we' to whom they are presents." Husserl, *En. Brit.*, loc. cit., p. 701. As with psychological subjectivity, so psychological inter-subjectivity' (as indicated by 'we' or 'us') too is transformed into 'transcendental inter-subjectivity'. *Ibid.*, p. 702.

[9] *Cf.*"... though the transcendental 'I" is not my psychological 'I', it must not be considered as if it were a second 'I', for it is no more separated from my psychological 'I' in the conventional sense of separation, than it is joined to it in the conventional sense of being joined. '*idem.*

[10] Husserl, *Ideas*, p. 113.

The typical phenomenological treatment of consciousness rests on the unique feature of what is termed " intentionality ", that is, intrinsic reference-character. The phenomenologist takes it as a basic truth that every actual state of experience (' cogito ') must be a consciousness of something. This said character of intentionality may not explicitly belong to all states of experience in being evident in the same degree. Nevertheless, it may be said to be potentially characterizing any and every state of experience.

Let us consider this character of intentionality more closely. It may superficially be explained as a relation between the state of consciousness concerned and its essential correlate. The latter is the ' meant ' in relation to consciousness. Such is the case with the perceiving of something, the judging of a matter, the valuing of a value, the wishing of the wished content, and so on. Now, in such situations, viewed purely in terms of intentionality, there is no question of relating a psychological event with some other real fact, or of finding a psychological connexion obtaining between the one and the other. We would rather be concerned with experiences in their purity involving ' essences '. Essences themselves are neither real nor unreal, but subsist in the light of phenomenological intuition.[12]

That consciousness is *of* something is, for the phenomenologist, more than a mere psychological fact. The intended correlate to which our experience—and, to that extent, the subject—is directed, is not to be taken as the object of individual experience in the ordinary sense. The intentional object is rather to be taken *qua* intentionality of a conscious act. However, there may be correlation between every possible object and a series of intentional acts. For, the intentional object of a conscious act is ' not an inherent abstract part or moment of that process '.[13] Thus, the object intended by one conscious act can coincide with the object intended by another.

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[11] *Ibid.*, pp. 113f., pp. 150ff.

[12] In reviewing Husserl's doctrine, Prof. Ryle states the position thus, "...every intentional act is related, though related by an internal relation, to a genuine subject of attributes." G. Ryle, "Phenomenology", *Proceedings of the Aristotelian Soc.*, Suppl. Vol. XI, p, 79.

V

Coming to the phenomenological method itself, it is marked by what is called ' phenomenological reduction '. With the suspending of belief in the natural world, all the sciences—natural and mental—undergo disconnexion. Phenomenology stands as a pure descriptive discipline which proceeds through absolutely transparent presentation on purely immanental lines. The standard that Husserl proposes to follow is ' to claim nothing that we cannot make essentially transparent to ourselves by reference to consciousness and on purely immanental lines '.[14] Accordingly, all transcendences whatsoever are suspended, and transcendent-eidetic regions and the ontologies which belong to them are subjected to the process of reduction to ' immanental essences '. The latter have their validity in the sphere of experiencing consciousness, that is, as contents which can be grasped within the stream of experience as conditioned by phenomenological suspension. Consequently, no transcendent-eidetic regions and disciplines should be taken as contributing any premise towards the study in view.

The distinction between immanent and transcendent perception in this context is clearly drawn. They are the two fundamentally different ways of appearing in experience. ' Immanent perception ' refers to the direct evidencing of experience, as belonging to the same sphere as the experiencer. Perception and the perceived here essentially constitute a homogeneous unity. But, *transcendently* directed intentional experiences are otherwise, referring to the experiences of other persons and of outer things and events. Consequently follow the fallibility of transcendent perception and the self-evidence of immanent perception. Every immanent perception necessarily guarantees the existence of its object.

The absolute indubitability of one's own existence (Dasein) indeed provides for the phenomenologist the best illustration of the self-evidence of the immanent. While the existence of the outer objects in the world of things and beings always remains dubitable, the Ego and the inner stream of experience ever claim absolute validity and certitude. Moreover, as Husserl indeed admits, the ego and its own stream of experience are grasped 'not only essentially but existentially '.

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[13] Dorion Cairns, "Phenomenology", *A History of Philosophical Systems*, ed. V. Ferm.

[14] Husserl, *Ideas*, pp. 176f.

In phenomenological investigation, 'Intuition', that is, essential-ideational insight into the datum of pure essence, is recognised to be the 'source of authority for knowledge'. Accordingly, the need for faithfully expressing the clearly given essence as intuitively apprehended is there. The aim is to bring the variable and vague matter of intuition into focus of complete clearness. Intuition is a particular concern with, or a peculiar turning towards, a content, that is reflectively observed in its pure being as such.

Apprehension of essence, however, has its own grades of clearness, varying from the limit of obscurity to the point of absolute proximity of the essence. The graded differences of clearness correspond to the modes of being given. On the one hand, the process of rendering intuitable, and on the other, that of enhancing the clearness of what is already intuitable—these are the two interconnected processes of making clear to oneself the essence. The position of mediate or inferential reasoning in this connexion is worth noting. Inference is recognised as but methodologically significant for leading us to the point of direct essential insight into the given.

Now, that type of conscious acts in which the stream of experience with all its manifold inherent phases can be grasped and analysed in the light of its own evidence is conveyed by 'reflection'. In a way, it is "consciousness' own method for the knowledge of consciousness generally".[15] It implies a turning back to the experience itself. Our attitude as knowing agents is sought to be altered radically, turning from the objectively given to the object-giving consciousness and subject. It is an essential insight which is always attainable because immediate. It brings home to us the sphere of pure and clear data—the original acts of consciousness.

Reflection, again, brings out one essential peculiarity which is distinctive of the transcendentally purified field of experience, that is, the relation of the stream of experience to the *pure* ego. Every conscious act pertains to the act-performing Ego, as being directed from the latter. In every act of consciousness, immediate or mediate—cognitive, volitional or emotional—'I am present, actually present'. But such 'I', found on phenomenological suspension, can never be taken as the individual that I am in actuality. What remains as the phenomenological residuum is rather pure experience, that is act. However, the phenomenologist would agree that no disconnecting can finally remove the *pure* subject that experiences and serves as the centre of all reference. As Husserl remarks, no reduction ‘ can get any grip on ’ the pure Ego.[16]

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[15] *Ibid.*, p. 219.

Two phases of experience are to be distinguished. On the one hand, there is ‘ the pure subjective phase of the way of experiencing ’, implying at the same time the ‘ pure ’ subject of the act of being directed. On the other hand, there is the content of experience to which the Ego is directed. Consequently, there are two poles in the sphere of experience, giving rise to two possible aspects for investigation—pure subjectivity and ‘ the constitution of objectivity as referred to its subjective source ’.[17] But the phenomenologist further maintains that the experiencing Ego as such cannot provide a separate subject-matter for enquiry. For him, the pure Ego, apart from its modes of being related through acts of reference, hardly presents any *entitative* character. It serves only as the centre of reference, potential or actual, for all acts of consciousness. Such reference pertains to the character of intentionality that marks in general all acts of consciousness. The explicit form of ‘ cogitatio ’ through which the Ego is said to experience should be taken only as a special mode of the general character of intentionality.

Salient features of Phenomenology as an independent philosophical discipline have been stated above. We find that Phenomenology aims at a presuppositionless philosophy, and claims to be examining the possible presuppositions behind the different strata of experience. The non-commital, if not antagonistic, attitude towards metaphysics is maintained herein—with what consistency may be a point of controversy. However, it has to be admitted that phenomenological reduction is meant to be a methodological device without any pretence to metaphysics. As Marvin Farber remarks, “ The phenomenological investigations of intentional experience, taken as such, may indeed illuminate metaphysical questions and even result in dissolving pseudo-questions, but it may not be construed metaphysically as idealism or realism within the frame of the method.”[18]

VI

We conclude by barely suggesting some lines of criticism on the general standpoint and methodology of Husserl's phenomenology.

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[16] *Ibid.*, p. 233.

[17] *Ibid.*, pp. 233f.

[18] M. Farber, *The Foundation of Phenomenology : Edmund Husserl and the Quest for a Rigorous Science of Philosophy*, p. 536.

1. Husserl's central contention regarding obtaining essences as disconnected with reality altogether seems evidently to be open to question. Is it possible that we get essences as excluded from every connexion with the real world, and proceed systematically in the ' neutral ' region of pure experience?

2. Husserl treats ' intuition ' in the light of sense-perception from the point of view of its presentative character. But, to speak of intuition and yet to speak of its datum as having no existential character seems hardly to be intelligible.

3. Husserl takes, rather presumptuously, subjectivity as enjoying exclusive self-existence which is plainly denied to the world of facts. Nor does he start with any *natural* locus of such supposed subjectivity.[19]

4. The anti-naturalistic bias is all along present in Husserl. M. Farber criticises phenomenology as proceeding ' with an artificial conception of experience as divorced from its natural status in the world and its cultural conditions '.[20] Therefore, according to Farber, it fails ' to do justice to experience itself in the complete sense of the term '.

5. Starting with anti-metaphysical attitude, Husserl surrenders in the long run his phenomenological position to an idealistic metaphysics of the Cartesian type.

Yet, with all the shortcomings, Husserl's phenomenology marks a bold way towards clarification and analysis of experience in all its depth.

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[19] *Cf.* M. Farber's criticism on "the assumptive nature of the general field of subjectivity," *The Foundation* pp. 541f.

[20] *Ibid.*

MODERN INDIAN AESTHETICS

Dr. S. K. Nandi

Art is the ' unbought grace of life '. That is how one defines art in the West in the wake of the Great Renaissance in Europe. The Indian Renaissance which marks a rephasing of Indian life as a whole is somewhat different from its Western counterpart. There in Europe the great life movement of the Renaissance represented only a poetic and artistic interest in the symbols and presentations of a high but vanished culture. It was an attempt at covering up the existing poverty of artistic symbols and intuitions by a wholesale adoption of the same from a dead civilisation. But the Indian Renaissance today fosters living and vital and spiritual interests in our symbols and traditions and intuitions and visions. That is the reason why we should briefly note all our past achievements in the field of aesthetics and this acquaintance with the past will no doubt lead to a proper appraisal of the present-day aesthetic trends in India.

At the most modest estimation as done by Professor Keith and others Natyasastra of Bharata, the first known comprehensive treatise on Indian aesthetics can be placed around second century B.C. It was Bharata who first elaborated the theory of Rasa and thus left a glorious legacy to the posterity to work out the details of the Rasa theory in a more logical way. He points out, in one of his famous verses, that Rasa (aesthetic pleasure) is the Sthāyībhāva (the dominating emotion) which is kindled by Vibhāvas—which are divided into Ālambana Vibhāvas (principal exciting and stimulating causes, being the human factors in emotion such as the lover or the beloved) and the Uddeepana bibhāvas (the accessory stimulating causes such as the moon, etc.)—and which is manifested by the anubhāvas (external manifestations, such as coy and shy and sidelong glances, smiles, etc.) and which is intensified by Vyābhichārībhāvas or Sanchārī Vibhāvas (ever-changing and ever-rising and ever-setting minor collateral feelings of pleasure and pain). There are eight such Rasas according to the conventional thinking. Sometimes one or two more Rasas have been accommodated to increase the number either to nine or ten such Rasas. There is also difference of opinion with regard to the primacy of Rasas. Bhoja and Viswanath made definite contribution in determining the primacy of one or the other Rasa. Bhatti, a noted ālaṁkārika of the 5th century

A.D. in his famous work Bhatti Kāvya gave illustrations of thirty-eight alaṁkāras or figures of speech.

Dandin is placed in the fourth-fifth century and his Kāvyādarśa is a monument of Sanskrit poetics. Bhāmaha,[1] another great name in Indian aesthetics is placed before Dandin by almost all the authorities except Kane. Bhāmaha, propounded Vakroktivāda, *i.e.*, configuration makes poetry. Kuntaka in the tenth century A.D. considered Vakrokti to be a figure of speech and it was not looked upon as configuration, *i.e.*, as principle of literary excellence. Kuntaka took Vakrokti in the sense in which Dandin used it; Vāmana in the eighth century wrote his Kāvyālankāra Sūtra Vritti and propounded the Rītivāda, *i.e.*, style is the soul of poetry. The ninth century saw the birth of Ānandavardhan [2] one of the foremost thinkers on aesthetics for all times. He sought to establish that dhvani (suggestiveness) is the soul of poetry. This Dhvanyaloka of Ānandavardhana has equally famous commentary called Lochana by Abhinavagupta.[3] Abhinavagupta and Ānandavardhana belong to the Kashmir Saiva School of thought. They reject like Plato the theory of ' Reflection in art ', though on different grounds from Plato. Kashmir Saivism believed that the objective world is nothing but a ' reflection ' and here reflection is not taken in the Platonic sense. The brilliant aestheticians who came next were Rājaśékhara (Kāvya mīmāṁsā), Dhananjaya (Daśarūpaka) Mukula Bhatta (Abhidhā vritti Matrukā). Next, notables to appear were Mahima Bhatta (Vyaktiviveka) Bhoja (Saraswati Kantabharana) and Kshemendra (Auchitya Vichāra Charchā and Kavikantabharana) and they belonged to the Eleventh century. Jayadeva (Chandrāloka) and Visvanatha (Sāhitya Darpaṅa) belonged to the thirteenth century. Appaya Dixita's famous commentary Kuvalāyānanda was written to elucidate Jayadeva's Chandrāloka. He belonged to the sixteenth century. He discussed nearly one hundred twenty four figures of speech—which is the largest number discussed in any work on poetics. The last great classical writer on aesthetics is Jagannāth. He lived in the seventeenth century. We know of nearly nine hundred works on Indian aesthetics logically thought of and written in excellent style. But many of them are not available.

We have a past rich in many ways. Many of our art and aesthetic movements speak of a revival in a re-shaped form of our past achievements. It is no wonder that the modern aesthetic thinkers of India seek guidance from the master minds of the past on the discussion of such theories of art as imitative, hedonistic, pedagogic, kathartic, mystic, intellectualistic, emotive and transcendental. The outstanding thinkers on aesthetic such as Sri Aurobindo, Dr. Bhagavan Das, K. S. Ramaswami Shastri, Dr. S. N. Dasgupta, Dr. S. K. De were all inspired by their rich heritage and many of them only revived what the masters of the yore wrote after years of toil and study. Many of the modern thinkers on aesthetics such as Dr. K. C. Pandey, Dr. Shankaran, Dr. De, Dr. Dasgupta and Dr. A. C. Bhattacharyya, will be remembered for their lucid interpretation and faithful presentation of the views of the ancient masters. Dr. S. N. Dasgupta is not only a chronicler and interpreter of Ancient Indian aesthetics. In his ' Kāvyavichāra ' and ' Saundarya Tatwa ' he enunciates his own dualistic standpoint and elaborates it in a masterly fashion. Dr. K. C. Pandey's authentic presentation of the Kashmir Saivism and a comprehensive interpretation of its rich aesthetic knowledge is certainly an achievement of outstanding value. Dr. Bhagavan Das's ' Science of Emotions ' has ranked him along with the best scientific writers on aesthetic. Dr. V. Raghavan, Dr. Rakesh Gupta, Sri P. Shastri are all known for their treatises on Ancient Indian aesthetics. Pandey, K. S. R. Shastri and others offered comparative studies in Indian and Western aesthetics. Their contribution towards a revival of Indian aesthetics cannot be overestimated. The ancient views have been pitted against modern views and evaluated against modern standards of evaluation. Old concepts have been presented in modern terminology and have been made accessible to modern minds. This has led to a proper understanding and appraisal of such old theories as Rasa and Dhvani. However, Dr. Dasgupta and Dr. De stand head and shoulders above the rest in pioneering work in this particular field. / Dr. Dasgupta is a philosopher of great repute and his works on Indian aesthetics based on original sources and rare manuscripts stand as a monument of oriental scholarship in the field.

Prof. H. Kabir was a teacher of aesthetics in the Calcutta University and his works entitled ' Poety, Monads and Society ' and ' Style of Saratchandra ' show his great acumen for original thinking. His outlook is western and he comes very close to Kant while he enunciates his ' aesthetic Purpose ' so close to Kant's ' purposiveness without a purpose '. Indian art blended in itself utility and aesthetic charm. In architecture, sculpture and painting, this phenomenon is discernible. Dr. Radha Kumud Mukherji an eminent thinker of present day India writes to say that Indian art has been always at the service of Religion and this explains its special characteristic, exhibiting approaches to the Infinite, as seen in the figures of the Buddha and the ascetic type generally. Kabir does not believe in this apparently utilitarian mission of art and speaks of a loose relation between the monad and the society. Dr. P. J. Chowdhuri wrote a book entitled " Studies in comparative aesthetics." His frequent inroads into the realms of Indian and

Western aesthetics have made his papers illuminating. He believes in the Aristotelian theory of art as a whole. The youngest of these writers on aesthetics is the author of this paper. His thesis for his doctorate degree ' An Enquiry into the nature and function of Art ' earned him a little recognition. He believes in Crocean aesthetics. Art is expression. But this expression is not identical with intuition as such. Expression is not different from the ' technique of externalization ' as held by Croce. The subject-object differentiation is not absent at the level of art. He believes in art as harmony, a perfect blending of form and meaning in the aesthetic object. Thus he fundamentally accepts Anandavardhan's Rasa-Dhvani approach to the basic aesthetic problems.

Dr. Nihar Ranjan Ray, Bagiswari Professor of Fine Arts, at the Calcutta University is a standard author on Indian and Eastern art. He believes like Havell that Indian art was born in the pilgrim's camp and nurtured by the highest spiritual ideas; it can never thrive in the sickly artificial atmosphere of the European drawing room. He is a voletile literary critic and his works on Buddhistic and Indian art are really valuable. Sri O. C. Ganguly is a former Professor of Fine Arts of the Calcutta University. He judges art from the external point of view. By external point of view we mean cataloging the works of art in an historical order and commenting upon them, pointing out the external characteristics of the products of art at different periods and the external influences, which are reflected in them. Sri Ganguly is an ardent researcher and an outstanding authority in this particular branch of study. The long traditions of Indian art-criticism inspired him and he took great pains in assessing the aesthetic merit of World art from the external point of view. A. Coomaraswamy also claims to be reckoned as a great protagonist of this line of thinking. He has many standard works on the art of India and Ceylon to his credit. They did not subscribe so much to the internal or philosophical point of view. Sri Bishnu De is a professor of English language and literature. His terse writings on the different problems of art criticism have earned him a good name. He is a member of the academy of Fine Arts. Sri Atul Chandra Gupta made his debut in the field of aesthetics with his monograph entitled ' Kāvya Jignāsā '. He examines briefly all the traditional aesthetic theories of India in a simple style of grace and shows profound insight into the fundamentals of Indian aesthetics. Sri Nalini Kanta Gupta of the Pondichery Asram, another erudite scholar wrote a few brilliant books and his frequent inroads into the continental aesthetics has given him a catholicity of outlook so rare amongst thinkers belonging to different schools of thought. His books are replete with illustrations from the master minds of world literature and his discussions are characterised by this breadth of canvas. Sri Bishnupada Bhattacharyya in his Sāhitya Mimāṁsā discusses the problems of aesthetics in the light of classical aesthetic thinking. The literary principles of the old masters have been invoked and he discusses with freshness and lucidity such ancient literary principles as Vakrokti and Dhvani. Sri Abhoy Guha, in his pioneer work as a writer in Bengali on aesthetics (Saundarya Tatwa) showed us the way and aesthetics in Bengali grew and developed after him. His book, though not of a very high order, deserves all the glory that a pioneer could claim in the field. Aesthetics in Bengali is growing from strength to strength and it has produced such stalwarts as Sri Sudhin Datta, Sri Nandalal Bose, Sri Nabendu Ghose and Sri Asoke Mitra. Sri Chintamani Kar, the present Principal of the Government School of Art, is a noted sculptor and painter and his books on sculpture are held in high esteem in knowledgeable circles. He deals mainly with the technique of sculpture in different countries. Sri Subho Tagore, a noted artist, is also known for his writings on art and aesthetics though they are very few in number. He explains his cubist's technique in an Indian setting. Sri Suresh Chakravarty and Sri Dilip Kumar Roy are noted for their writings on Indian Music, both modern and classical. Swami Pragjnānānanda is looked upon as one of the authorities on the Science of Indian music. His works entitled 'Rāg O Rūp' and 'Sangeet O Sanskriti' are monuments of Scholarship in this particular sphere. The evolution of Indian Ragas has been well discussed and a history of two thousand years of Indian music has been incorporated in 'Rāg O Rūp'. The influence of the traditional Indian music on the music of to-day has been traced adequately. The works of Swamiji may be looked upon as standard works on Indian music. Sri Narain Chowdhuri, a young writer on music has already made his mark as a facile writer. His book 'Sangeet Parikramā' is interesting for its historical and analytical interests. Sri Amiya Nath Sanyal's work on the evolution of music has been sustained by his deep penetrating insight into the nature of Fine Arts. Himself an artist, his treatment is really scholarly though punctuated by a synthetic appreciation of a true art connoisseur. He deserves an honourable mention for enriching modern Indian aesthetics, specially its music branch.

This brief account will be left poorer if we fail to mention Rabindra Nath Tagore and Avanindra Nath Tagore, the two great names of Indian Renaissance. They are not with us in body but their spirits inspire us all through. They are great aestheticians and their writings on aesthetics, *i.e.*, the philosophy of beauty and art are widely acclaimed. They judged art from the internal or philosophical point of view and from the technical point of view as well. Both were master artists and erudite scholars. They wrote on aesthetics and slowly Tagorite schools of aestheic thinking rear up their heads like the ' Craggy hill ' of Wordsworth, though they were not philosophers in the academic sense. It must be said in all fairness that the Tagores did not put up specimens of sound logical thinking and as such their writings on aesthetics may look sometimes contradictory. Here they are comparable to Romain Rolland. Rabindranath's discourse on content-form relation and his concept of reality in art are instances in point. Sometimes, he believes that the true art lives in the harmonious relation of form and content and again he might talk like an absolute subjectivist or idealist ignoring the distinction of reality or unreality in art, when judged from the rigorous logical view-point. Similarly Avanindranath, the master painter, sometimes speaks of Beauty as objective somewhat in the Platonic vein and again he falls into utter subjectivism while describing beauty somewhere else. This apparent lack of ' logicism ' in Tagores' writings does not take away much of excellence from their aesthetic writings. Tagores are more of seers than logic choppers. Their unequivocal reactions to the world of beauty at different times were recorded in all fidelity and they contradicted one another at times. Tagores were not strict disciplinarians in logical thinking. Hence the seeming anomalies. Their observations on art are marked by an artist's insight into the nature of beauty. Their findings partake more of the nature of intuitions than mere rationalisation of experiences.*

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* Abridged from my contribution to 'World Aesthetics' published in Spanish and French languages by the International Institute of Philosophy, Paris.

[1] His noted work Kāvyālankāra.

[2] Dhvanyāloka.

[3] Abhinavagupta's Ābhāsavāda closely resembles the theory of emanation as propounded by Plotinus.

[4] His famous work is Rasagangādhara.

ROBERT BURNS[*]

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"With the ready trick and fable
Round we wander all the day;
And at night in barn or stable,
Hug our doxies on the hay."[†]
From The Jolly Beggars: A cantata.

Lovers of the British lyric celebrated on January 25, 1959, the bicentenary of the birth of Scotland's national bard, Robert Burns. Most of us have come to know Burns through the tiny sheaf of Burns' poetry gleaned by Palgrave in the third book of the Golden Treasury. He is admired mostly for the exquisitely graceful love-chants, 'A Red, Red Rose', 'Mary Morison', 'Jean', 'Bonnie Lesley', 'Highland Mary', 'Ye Flowery banks of bonnie Doon' and 'Auld Lang Syne.' Undoubtedly these are universal favourites since they were first given to the world. The lyrical genius inspiring these gems is like the Poet's 'Luve', 'a red red rose, that's newly sprung in June and a melody that is sweetly play'd in tune.' These songs have become a part of our memory because they touch what is most permanent in human relations. They are warblings of the throbbing flesh, as perfectly musical and spontaneous as a bird's. Who can forget Love's pledge in these lines of Burns?—

As fair art thou, my bonnie lass,
So deep in Luve am I;
And I will luve thee, my Dear
Till a' the seas gang dry.[‡]
Till a' the seas gang dry, my Dear,
And the rocks melt wi' the sun;
And I will luve thee still, my Dear,
While the sands o' life shall run.

Who forgets the blithe and spontaneous expression of the pathetically overflowing long-wedded love, in the song to John Anderson?—

And mony a canty day, John,
We 've had wi' ane anither:
Now we maun totter down, John,
But hand in hand we 'll go.

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[*] A summary of this tribute was broadcast by the Gauhati station of the All India Radio on 25. 1. 1959.

[†] Doxies, Sweethearts.

[‡] Gang dry, run dry.

Burns is pre-eminently a poet of earthly love. The first poem that emerged from his lips was a song eulogising his young partner on the harvest-rig. His last faint poem was a song in fond memory of some former dearly-cherished love. Between these songs, there were about three hundred songs which unfold a felicitous spectrum of tender emotions. It is remarkable that such great poetry should blossom from the heart of a barren peasant whom one of his biographers, William E. Henley, considers " an ignorant genius who burst inexplicably into great poetry." However, the richness of Burns' poetry was recognised by contemporary poets like Cowper and Wordsworth and the latter refers to Burns in his poem ' Resolution and Independence ' in the following words:

> I thought . . . .
> Of Him who walked in glory and in joy
> Following his plough, along the mountainside.

Burns' poetry exhales a peculiar fragrance to the modern mind by virtue of his complexity of character, nearness to the earth and democratic spirit. He was born among the commonfolk of the lowlands of Scotland at Alloway in Ayrshire on January 25, 1759. His father was a devout farmer who conducted at night the family worship together with the neighbouring peasants. Burns admired the piety of his father and reverentially drew the latter's portrait in his poem, ' The Cotter's Saturday Night '. After his father's death, Burns himself, being the eldest son, used to conduct the family worship with all solemnity. At the same time he was averse to the asperities of orthodoxy. He was prepared to slight the bigot when he threatened to chastise the poet's weakness for women. Of course Burns was very frail in respect of Eve and his own wife remarked, " Our Robert should have had two wives." He was notoriously . . . . . have had two wives." He was notoriously unrestrained and we are told how at a party given by Mrs. Riddell of Woodlas Park, " when the gentlemen in the spring-tide of heated blood went up to join the ladies in the drawing room, the bard, with that self-confidence which was seldom absent from him, marched straight up to the beautiful hostess, and inflicted on her lips, before all the company, a bouncing smack." Such savage behaviour alienated all respectable people in Edinburgh from the bard; he was given up and the social ostracism of high Edinburgh society plagued his mind and ruined his health. He died prematurely at the age of seventy-seven and Dr. Currie, one of the early biographers of Burns, advises us " to profit by the misconduct of Burns."

The roistering mirth of Burns in the teeth of opposition from the Calvinist communion at Mauchline has given us charming verse satire.

Burns is a greater verse-satirist than Crabbe, greater nature-poet than Cowper and as great as Wordsworth in his evocation of natural beauties. The verse satire of Burns in poems like 'Holy Willie's Prayer', 'The Holy Fair' and 'Address to the Unco Guid'*—betrays religious hypocrisy and the hollowness of the rigidly righteous. When the Calvinist ministers assured him that the thrall of lust would go to the Devil, he replied to them in his 'Address to the Devil'. The following words are provocative and wildly humorous—

An' now, auld 'cloots',† I ken ye're thinkin,
A certain bardie's rantin, drinkin,
Some luckless hour will send him linkin,
To your black pit;
But faith! he 'll turn a corner jinkin,
And cheat you yet.

Among the Ayrshire ministers of peace, William was loud in his condemnation of Burns and enjoined public penitence upon the bard. Burns was enraged, wrote a satirical poem on the priest and urged his friend Kennedy to invite the victim to enjoy 'a bit of satire'. The priest was told that the satire was directed against an elderly luminary of Ayrshire and so in good humour he promised to listen silently to the end of the poem. The beginning was flattering; but soon the sting became obvious and Kennedy's voice rose as he recited the following stanzas—

L-d, in Thy day o' vengeance try him,
L-d, visit them who did employ him,
And pass not in Thy mercy by them,
Nor hear their prayer,
But for Thy people's sake destroy them,
An' dinna spare.
But L-d, remember me an' mine
Wi' mercies temporal an' divine,
That I for grace an' gear may shine,
Excell'd by nane,
And a' The Glory shall be thine,
Amen, Amen.

(From Holy Willie's Prayer.)

On hearing these caustic lines, Willie (or William) could contain no longer and left the room shouting in impotent rage, 'That Blackguard Burns! He'll go to hell; he'll go to hell!' Such was the pungency and devastating wit of Burns' satires.

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* Unco guid, Uncommonly good.
† Cloots, nickname for the Devil.

To his countrymen, Burns is more than a mere minstrel and verse-satirist. Indeed he is regarded as the voice and symbol of Scotland. Not only did he sing of the Scottish life and manners in the West Scots dialect, but also sought inspiration in native Ayrshire and immortalised its natural beauties in memorable verse. The hilarious vagrants in the poem Jolly Beggars hold their revelries in Poosie Nansie's inn at Mauchline. Tam O'Shanter meets the witches and warlocks in Alloway kirk. The Cotter s ' Saturday Night ' paints his home in the heart of rural Ayrshire.

Burns' peculiar contribution to Scotland however consists in his refurbishing of the traditional folk song of Scotland. During the middle ages, Dunbar and other ancient bards wrote popular airs and songs in the native dialect; but unfortunately due to reformation, for over a century and a half after the fifteenth century, the stream of Scottish poetry seemed to have dried up. By about the middle of the eighteenth century a crop of poets—Douglas, Kennedy, Scott, Montgomery and Davie Lyndsay—rose in Scotland to weave again the broken fabric of Scottish verse. Among them, Burns was a sovereign. Not only did he write poetry, but associated himself with James Johnson in the ambitious project of collecting Scottish songs in the five volumes of The Scot's Musical Museum (1787-1804). Later he was associated with George Thomson in a similar project and gathered old ballads, songs and melodies for Thomson's Scottish Airs (1793-1811) which reached six volumes.

Beyond the borders of Scotland, Burns is hailed as a political liberal, a democratic spirit. He was convinced that—

> Princes and lords are but the breath of kings,
> An honest man is the noblest work of God.

In such poems like 'To a Mountain Daisy', 'To a Mouse', he asserts the worth of the common man. While he was an exciseman in Dumfries, he declared his sympathy with the aspirations of the French Revolution and the American War of Independence, thus risking his own office. Further like Blake, he was a great force on the contemporary English romantics. Wordsworth openly acknowledged in 1803, his debt to Burns with the following tribute to the latter—

> Whose light I hailed when first it shone,
> And showed my youth
> How verse may build a princely throne
> On humble truth.

Mr. Eric Linklater, writing in a recent number of The Times, opines that Burns is somewhat parochial. It is indeed true that it is now a little difficult to appreciate the Scottish dialect in which Burns wrote his verse. It is also true that Burns was not like Shakespeare in the range of his genius; but, as Hazlitt remarks, " there is something of the same magnanimity, directness and unaffected character about him. He was not a sickly sentimentalist, a namby-pamby poet, a mincing metre ballad-monger, any more than Shakespare." To the criticism that Burns was an immoral wretch, Hazlitt replies that " Burns had written Tam O' Shanter, and that alone was enough." The best of Burns reveals a graceful ease and sparkling spontaneity which is found in Shakespeare, Wordsworth and Keats in their happy moments. This is because, Burns wrote for fun as he explained in lines written to James Smith—

Some rhyme a neebor's name to lash;
Some rhyme (vain thought) for needful cash;
Some rhyme to court the countra clash,
An' raise a din;
For me, an aim I never fash;
I rhyme for fun.

Song or poetry is the first love of Burns and therefore it has its own charm. As Carlyle wisely puts it—

" While the Shakespears and Miltons roll on like mighty rivers through the country of thought, bearing fleets of traffickers and assiduous pearl-fishers on their waves, this little Valclusa fountain will also arrest our eye, for this also is of Nature's own and most cunning workmanship; bursts from the depths of the earth, with a full gushing current into the light of day; and often will the traveller turn aside to drink of its clear waters and muse among its rocks and pines."

WOMEN'S ROLE IN SOVIET STATE ADMINISTRATION

O. KHVALEBNOVA,

Vice-President, Soviet Women's Committee

Vladimir Ilyich Lenin, the great leader and teacher of the Soviet people, attached immense importance to the problem of the participation of women in state administration. The Soviet Union has consistently followed the path indicated by Lenin, and has done everything possible to enlist women in the work of running the government. More and more women are taking a leading part in the economic and cultural development of the Soviet Union.

Hundreds of thousands of women are elected to the organs of state power. There are 366 women (27 per cent of the deputies) among the members of the USSR Supreme Soviet. Women constitute 32 per cent of the deputies to the Supreme Soviets of the Union and Autonomous Republics and 38 per cent of the total number elected to the local Soviets of Working People's Deputies. Among them are workers, peasants, school teachers, doctors, scientists women of diverse ages, professions and nationalities. But there is one common feature that unites them all—they have earned the confidence of the people by their selfless work.

FIRST WOMAN PRESIDENT

The fact that a woman—Y. Nasreddinova—is the President of the Presidium of the Uzbek republic's Supreme Soviet is a striking example of the position occupied by women in Soviet administration. She is actually the first woman in the world to hold the post of President. Needless to say, in every Union republic women hold the posts of Ministers and Deputy Ministers. Thousands of women hold leading posts in the local Soviets. Many of them are Chairmen and Vice-Chairmen of Regional, City and District Executive Committees of the Soviets of Working People's Deputies. Women-deputies actively participate in discussing various problems connected with industrial and agricultural development, the building of schools, hospitals, etc.

IN TSARIST TIMES

How different was the position of women in Tsarist Russia! The overwhelming majority of women were illiterate and were paid a little more than half of men's wages though they were working 11-12 hours a day. There was no legal protection of women's labour, mother and child protection was similarly lacking. Higher education was unheard of and women were forbidden to hold any government posts.

With the advent of Soviet power, a radical change in the status of women took place. All discriminatory laws were repealed. Article 122 of the Soviet Constitution expressly states: "Women in the USSR are accorded equal rights with men in all spheres of economic, government, cultural, political and other. public activity." All these rights have been fully realised.

To achieve complete emancipation of women and ensure their genuine equality with men, V.I. Lenin said, it is necessary to establish a common enterprise and enable women to take part in common productive labour. Only then will they occupy the same position as men. The rapid development of the Soviet economy opened up boundless vistas to women and enabled them to take an active part in all spheres of economy and culture. Women today constitute 47 per cent of the national labour force. They have mastered various kinds of difficult production jobs and possess high skill.

WORKING AND STUDYING

Soviet women are contributing their due share in the fulfilment of the Seven-Year Plan. They display a high degree of consciousness and strive to raise labour productivity and to introduce up-to-date machinery. While working, women utilise leisure time for their studies. At the Ivanovo Spinning Mill, for example, all the members of Nina Rossomakhina's team are students. Nina and two of her workmates are correspondence students of the Textile Institute, while eleven other girls are finishing a secondary evening school. All the rest are in the general education courses. This thirst for knowledge is today the general characteristic of all Soviet women.

Women with high organisational talent always climb up to leading positions. There are over 13,000 Soviet women functioning as directors of industrial enterprises, chief engineers, and in other such leading capacities. Among engineers and technicians 35 per cent are women.

Their contribution to the country's agricultural development too is great. At a reception towards the end of 1969, N. S. Khrushchev warmly congratulated peasant women of Ryazan Region on their great achievements in agriculture.

Through active participation in the collective-farm labour the peasant women have gained economic independence and equal status with men. Among Soviet women are many agronomists, zootechnicians, silviculturists, teachers, engineers etc. Women account for 40 per cent of the total number of agricultural specialists with higher and secondary education.

Illiteracy is a story of the past in Soviet Union. Secondary (eight-year) education has now been made compulsory. Women and girls constitute 47 per cent of the student population.

WOMEN INTELLECTUALS

Millions of women have entered into the ranks of Soviet intelligentsia. Women constitute 49 per cent of the specialists with higher education and 53 per cent of the specialists with secondary specialised education. And over 100,000 women work as scientists and research workers.

Soviet women—scientists, engineers and workers—put in much effort in the creation of sputniks and cosmic rockets. Soviet physicist Lidia Kurnosova works on the problem of cosmic space. Doctor of physico-mathematical sciences, Yelena Krasilshchikova, conducts extensive research on interplanetary travels.

In the field of literature and art too women are playing an important role in the USSR. Some of their contributions to literature, sculpture, painting and dramatic art are brilliant. The fame of Soviet ballerinas, stage actresses, women musicians have crossed the frontiers of our country and won universal acclaim.

The basic factor that has enabled Soviet women to play such a prominent part in the life of the country is the unflagging concern for them shown by the Soviet Government. The Seven-Year Plan envisages far-reaching measures to lighten the work of women in housekeeping. The steadily growing number of children's nurseries, kindergartens, boarding schools, dining rooms and public-service establishments will render valuable assistance to Soviet women, especially in the upbringing of children. This will enable Soviet women to take an even greater part in the work of administration.

SOME ASPECTS OF SOCIO-CULTURAL ENVIRONMENT AND ECONOMIC PLANNING IN INDIA

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Sociology and technology are, in practice, interwoven with each other. Any planned effort to bring about a change in technology will necessarily have repercussions on the socio-cultural environment, whereas a change in the socio-cultural environment is bound to have some impact on planning.* A cause-and-effect analysis of the relationship between the two is desirable from the point of view of understanding the problems underlying the whole process. A comprehensive study is ruled out in a paper like this. An attempt is, however, made to study some of the core institutions, *viz.*, caste-system, family-system, religion, class-structure, education and health and entrepreneurship from this point of view.

CASTE SYSTEM

The background of the caste-system in India is one of functional specialisation in a rural economy. With the passage of time, superimposition of taboos made the system rather rigid, leading to occupational immobility. The Hindu philosophy of 'Karma' has further contributed to this rigidity. "Thus a man is destined to be born in a particular caste which is a divinely ordained institution and he is proud of it. His 'Karma' leads him to it."† Blind faith in 'fatalism' and a sense of resignation towards predestined facts in Indian Society cramp economic incentive for occupational change. The influence of the dogma of the 'Transmigration of Souls' in caste-structure and hence rigid occupational pattern cannot be neglected either. Re-birth is visualised. Emancipation of soul is recommended. A man wants to better his condition in his next birth. He must, therefore, stick to, his caste-duties. As a result, the social status is not achieved by effort but it is ascribed by way of social inheritance of occupation, and there is hardly any incentive for changing the occupation. Village economy is the basis of such occupational castes. Planning for transforming the village-based economy into an industrial society cuts at the root of such caste-system. The explosive character of modern technique and intensification of welfare activities in the form of hospitals, schools and other similar public institutions, the use of which is thrown open to all irrespective of caste distinction, is bound to eliminate the caste-system. The caste-system, thus exposed to the operation of rational economic forces, released by economic planning in India, is giving way in favour of new occupational groups.

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* Planning may be defined as a process by which the level of technology is raised, the term technology being interpreted in a very wide sense.

† *Studies in Indian Social Polity*—Dr. B. N. Datta.

FAMILY SYSTEM

In Indian Society, the emphasis has long been on the family and not on the individual. The motivation for economic action is tradition-directed and custom-bound. Strong attachment to the family leads to immobility of labour-spatial and occupational. The fundamental desire of economic betterment and the economic initiative are killed to a large extent. Where production is organised on family basis and occupations are tied to family status, there is hardly any incentive for occupational change. This rather makes the economic environment uncongenial for economic planning. Economic planning cuts at the root of this institution by emancipating the individual from the family ties and releasing his energies for constructive works.

RELIGION

It is generally believed that religion is opposed to the spirit of science and so, to that extent, constitutes a drag on* scientific progress and hence industrial progress. It, therefore, is an obstacle to economic planning which basically aims at transforming a rural society into an industrial society. Now, if by religion we mean a set of beliefs and dogmas like 'Fatalism' and 'Transmigration of Souls', 'Karma' and 'Moksha', the impact is rather unhealthy in the sense that they weaken the economic incentives for change. Even if by religion we mean "a spiritual adventure to explore inward nature",† it does not help planning in that enlightenment of soul which requires a withdrawal from the outer life. Material welfare is likely to be subordinated to other-worldly ends. Even with latent abilities, the motivations to introduce change are very low. Economic desires are likely to be considered as evil. These attitudes are hardly helpful to planning. On the other hand, this sort of spiritual discipline inculcates in the individual qualities of hard work and austerity. The former improves the quality of labour and the latter stimulates the propensity to save, which are helpful to planning.

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* Technological progress is nothing but an application of the results of scientific research to achieve economic ends.

† *Science and Religion*—Speeches of Dr. Radhakrishnan, Publications Division.

CLASS STRUCTURE

In a village-based economy, the landlords and the traders constitute the group at the top. They tend to invest in land and inventory accumulation, as they are interested in quick and high rate of return on their investment. The traditional value-structure, too, favours ownership of land as a factor determining social status. This impedes the flow of savings into effective channels. Economic planning, which fundamentally aims at changing the base of the economy, is bound to remove the landed gentry from the top in favour of the rising class of industrialists, manufactures and entrepreneurs. With the abolition of Zamindari System, some of the landlords have been extinguished, whereas others have turned petty industrialists and entrepreneurs—a healthy economic sign, only if congenial economic environment is provided for the newly-released energies.

EDUCATION AND HEALTH

From the point of view of economic development, investment in education and health means formation of human capital, which is a vital productive agent. Merely increasing literacy is hardly sufficient from the point of view of accelerating economic development, though it increases efficiency of labour and is, hence, conducive to economic development. The more important problem, however, is to relate the pattern of education to the changing socio-cultural environment. Assuming the basis of the Third Five-Year Plan to be agro-industrial we will require skills in agricultural extension services, industrial skills and organisational and administrative skills in this order of priority. The means at our disposal being strictly limited, the aim of education should not be merely a spread in knowledge. It should be considered as human investment with the object of increasing production by creating more technical and organisational skills required for an expanding economy. It should also be used as an instrument of remoulding social attitude and value-structure and for creating a will for economic betterment, an awareness of the desirability of change and incentives for new ways.

The Planning Authorities in India are perhaps aware of the nature of the problem, but they have certainly not appreciated its full magnitude. Though the need for more technical education is recognised, the extent of the problem of re-organising the pattern of education to create managerial, administrative, organisational and entrepreneurical skills is hardly recognised.

ENTREPRENEURSHIP

Given pre-requisites of economic development in the form of technical equipment, technical skill and capital, a catalyst in the form of* entrepreneurical activity is needed to activate the process of production. Whereas institutions like family-system, caste-systems and traditional value-structure making material obsession derogatory weaken the motives for entrepreneurship, absence of big industries prevents entrepreneurical abilities from being acquired. Uncongenial environment in the form of lack of overhead capital, uncertainty of government's economic policies, constitute further drags on the effective operation of entrepreneurical ability. The state itself has to play, under the circumstances, a pioneering entrepreneurical role to remove these drags. In India, the Planning Authorities seem to be fully aware of the role of the state as entrepreneur.

CONCLUSION

Whereas a suitable socio-cultural environment is helpful to the process of transformation of a village-based economy into an industrial economy, planning for economic development itself tends to modify it by dislocating the core institutions like the family-system, caste-system, class-structure, religion and education. This process of dislocation might involve what is termed as social cost of economic development and may thus bring about a diminution in psychological and social welfare, even though material welfare may increase. In our attempt to accelerate the tempo of economic development by emphasising the setting up of heavy and basic industries, we should not overlook the sociological changes and social pains that it might involve. The sociological changes should, hence, be selective and slow.

* The process of bringing innovation in technique and organisation—Schumpeter.

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THE BOOLEAN METHOD OF ELIMINATION

RAMAPRASAD DAS

I. Statement of the Problem

1.1 *Prefatory*: In the method of analysis of single (primary) propositions all the elements of a given (premiss) proposition re-appear in the proposition deduced (the conclusion). This conforms to the methods called "immediate inference" in traditional logic. Thus, in "no men are perfect beings, ∴ no perfect beings are men", the terms "men" and "perfect beings" re-appear in the conclusion. But generally in reasoning, especially when reasoning contains more premisses than one, some elements (terms) of the given premisses are required not to re-appear in the conclusion *i.e.*, some one term, at least, of the given premisses is to be eliminated if a conclusion is to be drawn. Thus, in

all men are liable to make mistakes,
and prophets are men;
∴ prophets are liable to make mistakes.

the term *men* does not appear in the conclusion, it is eliminated. Such a term is called the "middle term" in traditional logic. The function of the middle term is to connect the other terms in the given premisses; so by eliminating the middle term we obtain in the conclusion a proposition relating the remaining terms. Arguments like the above are called syllogistic arguments or, simply, syllogism. In a syllogism there are three terms between the premisses (of four terms—the S and P of each of the premisses—one enters in both the premisses, this common term being called the middle term), of which the middle term is eliminated in the conclusion. Thus, suppose given the premisses All M are P, and All S are M, we want to find out the relation that directly holds between S and P. And this object cannot be attained unless the term M is eliminated.

1.2 *Elimination in Traditional Logic*: Elimination is regarded by some traditional logicians as so important a process that according to them reasoning consists mainly in the elimination of a certain term (the middle term) from some given premisses. It is also supposed that elimination requires at least two premisses wherefrom a certain term is to be eliminated. So these logicians hold that syllogism (which has two premisses and in which a conclusion is drawn by eliminating a term from the premisses) is the type of all reasoning. But this is not correct, for: *first*, reasoning need not involve two premisses (so syllogism is not the model of all reasoning), it may have any number of premisses; it may even be one-premissed *e.g.*, the immediate inference of traditional logic, and the deductions from single proposition discussed in a paper in the last issue of the journal.

Secondly, reasoning does not necessarily involve the elimination of elements contained in the given datum *e.g.*, in that of immediate inference, and the analysis of propositions (discussed in the last issue) where all the elements of the datum appear in the proposition deduced. *Thirdly*, elimination does not necessarily require two equations (premisses). From a single premiss any symbol may be eliminated and the conclusion drawn thereby.

We have said just now that reasoning does not necessarily involve elimination. But it cannot be doubted that elimination is a very important process; some important types of reasoning are based on elimination. Let us see how the necessity of elimination arises. Given, for instance, that $x=yzw$. We may determine the full implication of this proposition (by the Boolean method of expansion—by expansion aud interpretation of v=o). We may also obtain the description of any of the terms in the equation in terms of the other symbols (by expanding and interpreting equation of the form w=v). But suppose we want to obtain a description of a symbol y not in terms of all other symbols contained in the equation but in terms of some of them. Thus, we may like to determine in the above illustration the value of y in terms of x and z only. This requires the elimination of the symbol w. We shall discuss in Section II the method of elimination, more precisely, the method of reasoning by elimination.

1.3 *Elimination in Logic and Algebra*: The third objection, mentioned above, is important. This indicates an important point of difference between the algebra of class and the algebra of numbers. In the ordinary algebra we may eliminate one symbol from two equations, two symbols from three equations *i.e.*, $n-1$ symbol from a set of n equations. Here a fixed relation, then, exists between the number of equations and that of the symbols that may be eliminated. But no such fixed relation holds in logic between the number of equations (premisses) and the number of terms that may be eliminated. In logic from a single equation an indefinite number of symbols may be eliminated and conversely from an indefinite number of equations a single symbol may be eliminated. This difference between logic and the ordinary algebra is due, according to Boole, to the law of duality to which the symbols of logic are subject.

We proposed to discuss in section II the method of elimination of symbols from single equations. The question that naturally suggests itself in connection with elimination is: how to eliminate a certain symbol (or any number of symbols) from a set of equations – *e.g.*, from the premisses of a syllogism or any datum that consists of more premisses than one? This problem could be easily solved if we could reduce a set of equations to a single equation. For in that case a set of equations could be logically treated as a single equation *i.e.*, the method of elimination and other methods devised for treating single equations would be equally applicable to sets of equations. This is the problem of reduction—a problem that cannot be discussed here. We shall see that it is possible to reduce a given set of equations to a single equivalent equation. Now, as a set of equations is reducible to a single equation: (*a*) the method of analysis of single propositions and the method of determining the value of a symbol in terms of the other symbols are equally applicable to sets of equations; (*b*) the method of elimination from a single equation is equally applicable to a set of equations. This shows that the methods of logically treating single propositions discussed in an earlier paper are of utmost generality. They are equally applicable to sets of equations then they are reduced to single equations.

2. On Elimination

2.1 *Rule of Elimination*: The practical rule for eliminating any symbol from a given equation may be formulated thus:

> Bring if necessary, the terms of the equation to the first side (in the form $v=0$), give to the symbol to be eliminated the values 0 and 1, and multiply the resulting equations together.

2.11 *Illustration of the Elimination of v* : Consider, for instance, the equation $y = vx$ (*all men are mortal*, when y=men, x = mortal). Suppose we want to eliminate the indefinite symbol v and interpret the result. Bringing the terms of the equation to the first side, we have

$$y - vx = 0$$

When $v = 1$ the equation becomes $y - x = 0$, (*a*)
when $v = 0$ the equation becomes $y = 0$. (*b*)

Multiplying together the resulting equations (*a*) and (*b*) we have

$$y\ (y-x) = 0$$

or $$y - yx = 0 \text{ (noting that } y^2 = y)$$

or $$y(1-x) = 0. \qquad (c)$$

The last equation is the result of the required elimination (of v). It symbolically states that : men who are not mortal do not exist. Take another example, *no men are perfect*. When y = men, x = perfect, the proposition will be expressed as

$$y = v\ (1-x)$$

Let it be required to eliminate v and to interpret the result. Bringing the terms of the equation to the first side we have

$$y - v\ (1-x) = 0$$

When $v = 1$ it becomes $y - (1-x) = 0$, (*a′*)
when $v = 0$ it becomes $y = 0$. (*b*)′

Multiplying (a′) and (b′) we have

$$y\{y-(1-x)\} = 0$$

or $y - y(1-x) = 0$ (note that $y^2 = y$)

or $y - y + yx = 0$

or $yx = 0$ (c')

The equation (c') is the result of the required elimination; its interpretation is: perfect men do not exist.

2.12 *Elimination of v and Expansion* : Now the equation freed of the symbol v may be logically-treated more conveniently by the methods discussed in some earlier papers. Thus, suppose we want to find from the equation $y = v(1-x)$, rather from the equivalent equation (c') a description of perfect beings (x) and of imperfect beings $(1-x)$. Now,

$$yx = 0$$
$$x = 0/y.^*$$

Developing the second member we have

$$x = (0/1)\,y + (0/0)\,(1-y)$$

or $x = (0/0)\,(1-y)$ (note that $0/1 = 0$.)

It means that: perfect beings are not-men. Similarly with $(1-x)$. Thus

$$x = 0/y$$

$\therefore$ $(1-x) = 1-(0/y)$ (or y/y)

or $(1-x) = y/y$

Developing y/y we have

$$(1-x) = y + (0/0)\,(1-y)$$

It means that: the class imperfect being consists of all men and an indefinite part of the class of not-men.

2.13 *Importance of the Elimination of v*: We have illustrated the method of elimination by eliminating the symbol v. Any other symbol may similarly be eliminated (we shall illustrate afterwards such elimination). But the elimination of v is sometimes especially convenient. By eliminating v we may treat A_1 and E propositions as definitions. Thus $y = vx$ $\therefore$ $y - yx = 0$ or $y = yx$.

Consider the expression of A_1 and E proposition given above: $y = vx$ and $y = v(1-x)$ where y is S, and x or not $- x$ is P. We have seen that from $y = vx$ it follows that $y(1-x) = 0$ (c) and from $y = v(1-x)$ it follows that $yx = 0$ (c'). It will be noticed that

$$y = vx \equiv y(1-x) = 0 \qquad (1)$$

$$y = v(1-x) \equiv yx = 0 \qquad (2)$$

(read "$\equiv$" as "is equivalent to"). The equivalence in (1) and (2) may be shown thus. Regarding (1):

$$y(1-x) = 0$$
$$y = 0/(1-x).$$

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[*] "/" has been used to express fractions.

Developing the second member we have

$$y = (0/0)\, x + (0/1)\, (1-x)$$

$$\therefore\ y = (0/0)\, x$$

(noting that $0/1 = 0$ and rejecting the term whose coefficient is 0)

or $\quad y = vx \quad$ (for $0/0 = v$)

$$\therefore\ y\,(1-x) = 0 \equiv y = vx.$$

Similarly with (2). These equivalences are intuitively obvious. Thus it may be easily seen that

$y = vx$ or *all men are mortal* $\equiv (1-x)=0$ or *immortal men do not exist.*
$y = (1-x)$ or *no men are perfect* $\equiv yx=0$ or *perfect men do not exist.*

Because of this intuitively obvious character of the above equivalences Boole accepted, without any demonstration, the above symbolism, $x\,(1-x) = 0$, $xy = 0$ for A_1 and E proposition at the outset of his earlier work *The Mathematical Analysis of Logic.* Now, we find that the symbolism $x\,(1-y) = 0$ for *All X are* Y (whether of the A_1 or A_2 form) and $xy = 0$ for *No X are* Y (whether X = all not-Y or some not-Y) may be logically justified by the method of elimination. The practical lesson for us is this:

(1) Reduce "All X are X" to: $x\,(1-y) = 0$, and

(2) Reduce "No X are Y" to: $xy = 0$.

That is, (when x and y are respectively the S and P symbol of propositions)

(1′) take the contrary of P-symbol, multiply it by the S symbol and equate the product to 0. *i.e.*, $x\,(1-y) = 0$.

(2′) multiply the S and P symbol together and equate the product to 0 *i.e.*, $xy = 0$.

2.2. *Justification of the Rule of Elimination:*

The justification of the above-mentioned rule of elimination will be found in the proof of the following theorem. Note the following symbolism used in the paper in the last issue but repeated below:

$f\,(x)$ = the function of x *i.e.*, any algebric expression involving the logical symbol x,
$f\,(1)$ = what $f\,(x)$ becomes when x is changed into 1,
$f\,(0)$ = what $f\,(x)$ becomes when x is changed into 0.

Theorem: If $f\,(x) = 0$ be any logical equation involving the class symbol x, with or without other class symbols, then the equation

$$f\,(1)\, f\,(0) = 0$$

will be true independently of the interpretation of x and it will be the complete result of the elimination of x from the equation $f\,(x) = 0$

In other words, the elimination of x from any given equation $f\,(x) = 0$, will be effected by successively changing in that equation x into 1 and x into 0 and multiplying the two resulting equations together.

Proof: Developing the first member of the equation $f(x) = 0$ we have

$$f(1)\,x + f(0)\,(1-x) = 0 \qquad \text{or } f(1)\,x + f(0) - f(0)\,x = 0$$

$$\text{or } \{f(1)-f(0)\}\,x + f(0) = 0 \qquad \text{or } \{f(1)-f(0)\}\,x = -f(0)$$

$$\therefore x = \frac{-f(0)}{f(1)-f(0)} = \frac{-f(0)}{-[f(0)-f(1)]} = \frac{f(0)}{f(0)-f(1)} \quad \dots (a)$$

$$\therefore (1-x) = 1-\left\{\frac{f(0)}{f(0)-f(1)}\right\} = \frac{f(0)-f(1)-f(0)}{f(0)-f(1)}$$

$$\text{or } (1-x) = \frac{-f(1)}{f(0)-f(1)} = -\frac{f(1)}{f(0)-f(1)} \quad \dots (a')$$

We have now obtained the value of x and $(1-x)$. We know that the equation $x\,(1-x) = 0$ is universally true, it is in fact a formulation of the law of duality—the most important logical law in the Boolean logic. Now, substituting the above values of x and $(1-x)$—numbered (a) and (a')—in the universally true equation

$$x\,(1-x) = 0$$

we have
$$\frac{f(0)}{f(0)-f(1)}\left\{-\frac{f(1)}{f(0)-f(1)}\right\} = 0$$

or
$$-\frac{f(0)\,f(1)}{\{f(0)-f(1)\}^2}2 = 0$$

$\therefore f(0)\,f(1) = 0$ (for: if $x/y = 0$ then the numerator $x = 0$; division by 0 is not permitted in the ordinary algebra)

The above, then, is the proof of the proposition: if $f(x) = 0$, *then* $f(1)\,f(0) = 0$.

2.3. *Elimination and the Law of Duality*: It will be noticed that in the above demonstration of the theorem: if $f(x) = 0$ then $f(1)\,f(0) = 0$, the elimination is really effected by the universally true proposition $x\,(1-x) = 0$ – the law of duality. It will be recalled that in the first demonstration we have first determined the values of x and $(1-x)$ from the expansion of $f(x) = 0$ and then put the values in $x\,(1-x) = 0$. So there elimination is really effected between $f(x)$ and $x\,(1-x) = 0$.
The method of elimination is, then, founded on the law of duality. So any symbol that is subject to the law of duality may be eliminated. As every symbol used in a logical equation satisfies the law $x\,(1-x) = 0$, any symbol involved in a logical equation may be eliminated.

2.4 *Illustration of Elimination (of any symbol)*: We have discussed above the method of elimination and the justification of the method. We shall conclude this section by citing some more illustrations. Let us consider the definition:

"Wealth consists of things transferable, limited in supply and either productive of pleasure or preventive of pain",
taking "or" in the inclusive sense. Let

w = wealth
s = things limited in supply
t = things transferable
p = things productive of pleasure
r = things preventive of pain

The above definition will then be expressed as

$$w = st\,\{ pr + p\,(1-x) + r\,(1-p) \}$$

or $$w = st\,\{ pr + p - pr + r - rp \}$$

or $$w = st\,\{ p + r - pr \}$$

— a proposition invloving five logical symbols.
Let it be required to obtain a description of w in terms of symbols other than r. The problem is, then, to eliminate r. Bringing the terms of the above equation to the left side we have

$$w - st\,(p + r - pr) = 0$$

when $r = 1$ the equation becomes $w - st = 0$ and when $r = 0$ it becomes $w - stp = 0$. Multiplying the resultant equations we have

$$(w - st)\,(w - stp) = 0 \qquad (1)$$

or $$(w - st)w - (w - st)\,stp = 0$$

or $$w - stw - stpw + stp = 0 \qquad (2)$$

or $$-w + stw + stpw = stp$$

or $$stw + stpw - w = stp$$

$$\therefore w = \frac{stp}{st + stp - 1}$$

Developing the second member of this equation we get
$w = stp + (0/0)st(1-p) + (0/-1)\,s\,(1-t)p + (0/-1)\,s\,(1-t)\,(1-p) + (0/-1)\,(1-s)\,tp + (0/-1)\,(1-s)\,t(1-p) + (0/-1)\,(1-s)\,(1-t)p + (0/-1)\,(1-s)\,(1-t)\,(1-p)$. Rejecting the terms whose coefficients are 0 (note that $0/1 = 0$) we obtain

$$w = stp + (0/0)\,st\,(1-p) \qquad (3)$$

—the required deduction which, when interpreted, means that: wealth consists in all things that are limited in supply, transferable and productive of pleasure and an indefinite number of things that are limited in supply, transferable and not productive of pleasure.

2.41 *A Note*: We have said while discussing the rule of elimination that the equations obtained by successively putting 1 and 0 for the symbol to be eliminated are to be multiplied together. Following this rule we have, by the operation of multiplication, deduced, for instance, (2) from (1) above. But the operation of multiplication may in such cases be dispensed with (it is convenient to dispense with multiplication when the terms to be multiplied are very complex). As a substitute of multiplication the method of expansion may always be used. Note, then, that:

the process of development may in all cases be made to supercede that of multiplication.

We shall certainly express the equations obtained by giving the values 1 and 0 to the symbol to be eliminated in the form of a logical product *i.e.*, we shall use the expression of multiplication, but we need not perform the operation. Thus, we shall write

$$(w-st)\ (w-stp) = 0 \tag{1'}$$

without actually performing the operation of multiplication. In stead we shall develop it with respect to w, for in the above example we wanted to eliminate r to get a description of w in terms of symbols other than r. Developing (1′) with reference to w we obtain

$$(1-st)\ (1-stp)w + stp(1-w) = 0$$

(to find out the above expansion work out according to the formula $f\,(stp,\,w) = f\,(stp,\,1)\,w + f\,(stp,\,0)\,(1-x)$

Now, from the above equation we have

$$(1-st)(1-stp)w + stpw - stpw = 0$$

$$\therefore\ -(1-st)\ (1-stp)\ w + stpw = stp$$

$$\therefore\ w = \frac{stp}{stp-(1-st)\ (1-stp)}$$

Developing the second member we get

$$\begin{aligned} w = {} & stp + (0/0)\,st\,(1-p) + (0/-1)\,s(1-t)\,p + (0/-1)\,s(1-t)\,(1-p) \\ & + (0/-1)\,(1-s)\,tp + (0/1)\,(1-s)t(1-p) + (0/-1)\,(1-s)\,(1-t)\,p \\ & + (0/-1)\,(1-s)\,(1-t)\,(1-p) \end{aligned}$$

or $$w = stp + (0/0)\,st\,(1-p) \tag{3'}$$

This is identical with (3) above—arrived at by multiplication. The above example shows that for determining the value of a symbol by elimination of another we need not perform the operation of multiplication, instead we may take recourse to the process of expansion of the expression of the product with respect to the symbol whose value is required to be determined.

2.52 *Elimination and Analysis*:

The following example does not directly illustrate elimination, it illustrates analysis (discussed above under the form $w = v$). But the example is instructive, for it shows how the derived proposition may, and for conformity to ordinary discourse should, sometimes be abbreviated.

Suppose that from the definition of wealth mentioned above we want a description of s (things limited in supply) as related to w, t and p, omitting all reference to r. This required first the elimination of r from the definition

$$w = st\,\{pr + p\,(1-r) + r\,(1-p)\,\}$$

In the last example we already eliminated r from this definition and we arrived at the following result of elimination

$$w - wstp - wst + stp = 0. \qquad (2')$$

So at present we shall simply accept it as a proposition omitting all reference to r. Let us rewrite it in the form:

$$w - s\,(wtp + wt - tp) = 0$$

or

$$w - s\,(wt + wtp - tp) = 0$$

$$\therefore\ s\,(wt + wtp - tp) = w$$

$$\therefore\ s = \frac{w}{wt + wtp - tp}$$

Expanding the second member we get

$$s = wtp + wt\,(1-p) + (1/0)\,w\,(1-t)\,p + (1/0)\,w\,(1-t)\,(1-p) + 0\,(1-w)\,tp + (0/0)\,(1-w)\,t\,(1-p) + (0/0)\,(1-w)\,(1-t)\,(1-p).$$

Omitting the 5th term whose coefficient is 0 and severally equating to 0 the 3rd and 4th term whose coefficients are 1/0 we obtain

$$s = \text{``}wtp + wt\,(1-p)\text{''} + (0/0)\,(1-w)\,t\,(1-p) + [(0/0)\,(1-w)\,t\,(1-p) + (0/0)\,(1-w)\,(1-t)\,(1-p)] \qquad (a)$$

$$w\,(1-t)\,p = 0 \qquad (b)$$

$$w\,(1-t)\,(1-p) = 0 \qquad (c)$$

The above implications may be translated thus:

(*b*) = wealth that is intransferable and productive of pleasure does not exist,

(*c*) = wealth that is intransferable and not productive of pleasure does not exist.

The direct conclusion (*a*):

Things limited in supply consist of "all wealth that is transferable and productive of pleasure, all wealth that is transferable but not productive of pleasure", and an indefinite amount: of transferable things that are neither wealth nor productive of pleasure, of [things that are not wealth, not transferable but productive of pleasure and also of things that are not wealth, not transferable but not productive of pleasure].

About the above proposition about s it will be noticed that it contains some terms which, though follow logically from the given definition, seem to be redundant or at least do not conform to the practice of ordinary discourse. Thus, we do not need speak of "all good men who are wise and all good men who are not wise", it is enough to use "all good men" for "wise" and "not wise" exhaust the universe of good men. Similarly with the expressions, in (*a*) under inverted commas and under brackets. They should be similarly reducible to simpler terms. They may in fact be so reduced by the rules of ordinary algebra. Thus take expression under commas in (*a*):

$$wtp + wt\,(1-p).$$

This is reducible simply to wt. For:

$$\begin{aligned} &wtp + wt\,(1-p) \\ &\qquad = wt\,\{p + (1-p)\} \\ &\qquad = wt\,(1) \\ &\qquad = wt. \end{aligned}$$

Similarly with the third-bracketed expression in (*a*).

$$\begin{aligned} &(0/0)\,(1-w)\,(1-t)\,p + (0/0)\,(1-w)\,(1-t)\,(1-p) \\ &= (0/0)\,(1-w)\,(1-t)\,\{p + (1-p)\} \\ &= (0/0)\,(1-w)\,(1-t). \end{aligned}$$

So abbreviating thus the 1st and 2nd term of the second member of the direct conclusion (*a*) into one term, and also the aggregation of the 4th and 5th term into one term we get

$$s = wt + (0/0)\,(1-w)\,t\,(1-p) + (0/0)\,(1-w)\,(1-t) \qquad (a')$$

the interpretation of which is:
things limited in supply consist of all transferable wealth together with an indefinite amount: of what is not wealth, transferable and not productive of pleasure, and of what is not wealth and not transferable.
Similarly the aggregation

$$(1/0)\,w\,(1-t)\,p + (1/0)\,w\,(1-t)\,(1-p)$$

from which the independent relations (*b*) and (*c*) follow may be abbreviated. Thus the above aggregation may be rewritten in the form

$$(1/0)\,w\,(1-t)\,\{p + (1-p)\}$$

or

$$(1/0)\,w\,(1-t)$$

$$\therefore\ w\,(1-t) = 0 \quad \text{(equating to 0 the constituent according to } (d))$$

which means wealth that is not transferable does not exist. This may also be put affirmatively in the following form:

$$w\,(1-t) = 0$$

$$w = \frac{0}{(1-t)}$$

By developing $\frac{0}{(1-t)}$ we get

$$w = (0/0)\, t + (0/1)\,(1-t)$$

or $\quad w = (0/0)\, t$ (rejecting the 2nd term, for $0/1 = 0$).

It means that wealth is transferable

2.5 *Elimination of more symbols than one.*

To eliminate from a given equation more symbols than one: either

2.51 make the required eliminations successively, *i.e.*, eliminate the symbols one by one by the method outlined above,

2.52 treat the compound symbol (sum, products etc.) *i.e.*, the function or the expression in the equation involving only the symbols that are to be eliminated, as a single symbol, and eliminate it according to the previous method.

The justification of the rule (2.52) is this. The method of elimination is based, we have seen, on the law of duality and is hence applicable to the elimination of any single symbol that satisifies the duality principle. Now, like individual symbol x, y etc, the compounds xy, $x+y$, $x\,(1-y)$ etc. satisfy the law of duality $(xy)^2 = xy$, $(x+y)^2 = x+y$ etc. So they may be treated as single symbols.

2.511 *Example of* 2.51:

Consider again the definition about wealth

$$w = st\,(p + r - pr).$$

Suppose we want to eliminate from this equation both r and t. According to rule (1) we are required to eliminate first the symbol, say, r and then the other, t. Eliminating r we have

$$w - wst - wstp + stp = 0$$

according to a previous demonstration. Let us from this equation eliminate t.

When $t = 1$ the equation becomes

$$w - ws - wsp + sp = 0,$$

when $t = 0$, the equation becomes

$$w = 0.$$

Multiplying these results we get

$$w\,(w - ws - wsp + sp) = 0$$

or $\quad w - (ws - wsp + wsp) = 0$

or $\quad w - ws = 0$

or $\quad w\,(1-s) = 0.$

This is the result of the required elimination. This means: wealth that is not limited in supply does not exist, or

$$w = \frac{0}{1-s}$$

or $w = (0/0)\,s + (0/1)\,(1-s)$ (by expansion)

or $w = (0/0)\,s$

i.e., all wealth is limited in supply

2.521 *Examples of* 2.52 :

Let it be required to eliminate s and t from the equation $w = st\,(p+r-pr)$. Let us, according to rule (2), treat st as a single symbol.

$$w = st\,(p + r - pr)$$

$$\text{or} \quad w - st\,(p + r - pr) = 0$$

When $st = 1$, it becomes

$$w - (p + r - pr) = 0$$

$$\text{or} \quad w - p - r + pr = 0,$$

when $st = 0$ it becomes

$$w = 0$$

By multiplication we obtain

$$w\,(w - p - r + pr) = 0$$

$$\text{or} \quad w - wp - wr + wpr = 0$$

This is the result of the elimination of s and t. This equation may now be logically treated like any other logical equation. Thus let it be required to determine from this equation the value of w. We have

$$w - wp - wr + wpr = 0$$

$$\therefore\ w = \frac{0}{1 - p - r + pr}$$

or, by expansion

$$w = (0/0)\,pr + (0/0)\,p\,(1-r) \div + (1-p)\,r + (0/1)\,(1-p)\,(1-r)$$

$$\text{or} \quad w = (0/0)\,pr\ (0/0)\,p\,(1-r) + (0/0)\,(1-p)\,r$$

Abbreviating $(0/0)\,pr + (0/0)\,p\,(1-r)$ we have $(0/0)\,p$ (for $(0/0)\,pr$

$+ (0/0)\,p\,(1-r) = (0/0)\,p\,(r + 1 - r)\ (0/0)\,p$)

So we have $w = (0/0)\,p + (0/0)\,(1-p)$

which may be easily interpreted.

Or suppose we want a description of p from the above equation. Then.

$$w - wp - wr + wpr = 0$$

$$\text{or} \quad wp - wpr = w - wr$$

$$\text{or} \quad p\,(w - wr) = w\,(1-r)$$

$$\therefore\ p = \frac{w\,(1-r)}{w - wr}$$

By development,

$$p = (0/0)\,wr + w\,(1-r) + (0/0)\,(1-w)\,r + (0/0)\,(1-w)\,(1-r)$$

Condensing the last two terms into one, viz $(0/0)\ (1-w)$ we get

$$p = (0/0)\ wr + w\ (1-r) + (0/0)\ (1-w)$$

or $\quad p = w\ (1-r) + (0/0)\ wr + (0/0)\ (1-w)$

the interpretion of which is obvious.

Suppose we are required to eliminate from

$$w = st\ (p + r - pr)$$

$$\text{or} \quad w - st\ (p + r - pr) = 0$$

the expression $(p+r-pr)$ *i.e.*, the symbols p, r and pr. Treating $(p+r-pr)$ as a single symbol the required elimination may be effected thus:

when $p+r-pr = 1$ the above equation becomes

$$w - st = 0$$

when $p+r-pr = 0$ the above equation becomes

$$w = 0 .$$

Multiplying the results we get

$$w\ (w - st) = 0$$

$$\text{or} \quad w - wst = 0$$

This is the complete result of the elimination of p, r and pr. Suppose from this we want to determine the value of w. From the above equation we have

$$w = \frac{0}{(1-st)}$$

or $\quad w = (0/0)\ st + (0/1)\ s\ (1-t) + (0/1)\ (1-s)\ t + (0/1)\ (1-s)(1-t)$ (by expansion)

or $\quad w = (0/0)\ st.$

To determine the value of $1-w$.

$$w = \frac{0}{1-st}$$

$$\therefore\ 1-w = 1 - \frac{0}{1-st}$$

$$\text{or} \quad 1-w = \frac{(1-st)}{(1-st)}$$

or $\quad 1-w = (0/0)\ st + s\ (1-t) + (1-s)\ t + (1-s)\ (1-t)$

or $\quad 1-w = (0/0)\ st + s\ (1-t) + (1-s).$

Reviews and Notices of Books

England and Afghanistan—By Dilip Kumar Ghose, M.A., D. Phil.; published by The World Press Private Ltd., Calcutta, 240 Pages. Price Rs. 15.00—25 s. nett.

The book is a welcome addition to the historical literature of a period that has been rich with masterly expositions from soldiers, scholars and statesmen of repute. One wonders at the ambitious undertaking of a young debutant in unravelling the intricacies of a knotty problem of Indian history that has baffled British statesmanship for about a century. But the author has, with commendable prudence, limited his survey to what he has termed, 'a phase of the relations between England and Afghanistan'. The phase in question bears on the Forward Policy with regard to the North-Western Frontier of India. The policy is traced from its genesis in the wake of the complexities created by the annexation of the Punjab in 1849 and it is followed through its fluctuating fortune to its fate in the Anglo-Russian agreement of 1887. The author has taken great pains to ascertain whether this much-vexed policy was the mere brainwave of inspired jingoism or the inevitable sequel of grim historical forces like Russian advance through Central Asia, Persian vacillation, Afghan restiveness, ferment of flitting tribal peoples and the unalterable impact of topography and regional strategy. The view-points of the distinguished exponents of this school are carefully weighed, as in a precision-balance, against the contentions of the stalwarts of the stationary school. The crucial point of this acrid controversy is reached in the vice-royalty of Lord Lytton whose blatant advocacy of the policy of dismemberment of Afghanistan forms the subject of two lengthy chapters in which the official records of the archives are checked up by and embellished with new information gleaned from the hitherto unavailable private papers of Lord Lytton. In the opinion of the author, this policy remained a mere personal obsession of Lord Lytton. Neither the impassioned rhetoric nor the political vehemence of this brilliant man of letters could transform it into an accepted political creed of his cabinet which stuck tenaciously to "the advanced frontier as secured by the Treaty of Gandamak, 1879". Refreshing departure from current authorities has been made in this connection in reassessing the expediency of the Sandeman System in Baluchistan. The justice of the enforced abdication of the much-maligned Yakub Khan from the Afghan throne is the subject of a searching review in the light of the findings of the Thomson Committee and of the ablest legal opinions on the subject. There is a cold objectivity in the narrative of the dramatic developments which culminate amidst gathering shadows in the dreadful end of Cavagnari. But it is shot through with poignant touches of pathos as in the last meeting of Lord Roberts with Cavagnari where with artful suggestiveness the author induces in the minds of his readers a melancholy foreboding as of a Sophoclean destiny. The negotiations with Abdur Rahaman begun by Lord Lytton is reviewed with all its ramifications in Chapter IV. The character and justification of the settlement and the respective part played in it, immediately by Lords Ripon and Hartington and incidentally by Cranbrook and Lytton are discussed with the detachment and caution that the intricacy of the problem demands. In this context the author brings into clear relief the party oscillation in England during this period and seeks to explode the popular nostrum that Afghan policy has always been the sport of party bickerings. Thus, he shows that the retrocession of Kandahar was dictated by political exigency which had been recognised by the Conservatives when they had been in power, no less than by the Liberals who actually accomplished it. The settlement of Lord Ripon ran closely on the lines laid down in the previous treaty concluded by the Conservatives in 1879, and in direct contravention of the categorical instructions of Lord Hartington to the contrary. Again, Lord Ripon shared the faith of the Conservatives in the efficacy of a clear delimitation of the Afghan frontiers as the strongest bulwark against Russian menace in these directions. The clash of Anglo-Russian expansionist policies converging in the Panjdeh and Zulfiqar crises is dwelt upon in Chapter VI, with convincing lucidity of details, while the difficulty of the reader with unfamiliar place names is lightened by a carefully drawn map to illustrate the zonal controversy. The question as to whether this tense and unsavoury episode could have been and should have been avoided by Gladstone is discussed only to be closed with the author's conclusion that "in regard to the debatable land between the Oxus and the Hari Rud, possession was considered to be nine points of the law and consequently the Panjdeh crisis lay in the logic of events". The role of Afghanistan as the unhappy catspaw of rival ambitions, with her difficulties aggravated by the uncertainty of her frontiers and the frequent shifts of her nomadic population is analysed in its proper historical perspective from the days of Lawrence to the settlement of 1887. One closes the book with a feeling that a task of amazing complexity has been successfully performed without losing the forest in the trees. Original and secondary sources have been garnished with illuminating observations from contemporary journals. The interest in the narrative seldom flags. Facts are marshalled to support judgement on controversial issues where the temptation to dogmatise is so easy a pitfall to the unwary. It is gratifying to observe that though the work is prepared under the grind of a thesis, it is presented as a flesh and blood tale which the reader can enjoy without being scared away by pedantic vapourings. Yet the select bibliography at the end of the book leaves one in no doubt of the scholarly discrimination and ardent endeavour that have gone to its making. One only misses in this book an adequate emphasis on the Russian perspective, the intensity of the forces impelling Russian advance in Central Asia, the various shifts and strands of her policy, and her reactions to British moves in Herat, Seistan or Kandahar· Again, as the book is expected to be of great service to the swelling mass of students of advanced history of Modern India, the utility of the present volume would, in our opinion, be greatly enhanced by the insertion of a map of the North Western frontier of India in relation to the approach from Central Asia, for a clearer appreciation of the Forward, the Stationary and the Close Border policies dealt with in this volume. As the merit of the book bears promise of a second edition the suggestion made in no captious spirit, may not go amiss with the learned author.

Ramesh Chandra Mitra

Ourselves

CENTENARY PROFESSORSHIPS

Steps are being taken to implement the decision of the University to establish a number of Centenary Professorships to mark the commemoration of the centenary of the University. Three Centenary Professors will be appointed at present for the following branches of studies, namely, Public Administration, International Relations (including International Law) and Statistics. It may be mentioned in this connection that as early as the year 1920, on the recommendation of the Council of Post Graduate Teaching in Arts and Governing Body of the University Law College, a Professorship in International Law (Private and Public) was founded. Professor Arthur Brown, M.A., L.L.B., of Cotton College, Gauhati, was appointed the first Professor in 1920. But Mr. Brown resigned the post in 1923, and no new appointment has been made since then. As India as an independent country is now frequently called upon to participate in international conferences and to deal with complex problems of International Law, advanced study and research in this subject is necessary. It may also be mentioned that Current International Relations (including a general knowledge of International Law in Peace and War) is one of the subjects of the M.A. syllabus in Political Science, and International Law is one of the subjects of the M.A. Course in History. Public International Law is also one of the optional subjects of the M.A. Course in Political Science. Private International Law is a subject of study in the L.L.M. Course of the University. The need for the establishment of a Professorship in this important branch of study can hardly be over-emphasised.

Public Administration is increasingly being recognised as a science, and the principles and practice of Public Administration are now taught in all modern Universities of the World. Many years ago an Institute of Public Administration was founded in England, and Viscount Haldane of Cloan was its Founder President. This Institute has done excellent work in creating the interest of the people in this important branch of social science. The necessity for the creation of a Professorship in this subject in our university is therefore, paramount.

Statistics is now regarded as a basic subject in human knowledge. All important branches of study are now approached from the statistical point of view. A Professorship in such a subject is a fitting recognition of its importance.

GIFT OF A LIBRARY OF BOOKS BY THE SOVIET UNION.

On 1st of March, 1960 His Excellency N. Khushchev addressed the following letter to the Vice-Chancellor of our University :

"It is a great pleasure for me to hand over to the University which is headed by you a library of scientific literature and fiction in Russian and foreign languages. The University of Calcutta of the city which is connected with the name of great Rabindranath Tagore has a great glorious history. Let our Library serve as a symbol of increasing and strengthening friendship between the Soviet Union and India.

From the bottom of my heart I wish you, all professors and teachers of the University, great success in their noble work of bringing up and teaching the youth and in preparing young people worthy builders of new India."

Notifications

CALCUTTA UNIVERSITY

NOTIFICATION No. C3R/26/59

It is notified for general information that the Revised Syllabus in Chemistry for the B.A. & B.Sc. Examinations (Pass & Honours) as set out in the accompanying pamphlet were adopted by the Academic Council on 18th September, 1958, and accepted by the Senate on 29th August, 1959.

Senate House: D. CHAKRAVARTI,
The 4th November, 1959 *Registrar.*

Revised Syllabus in Chemistry

B.A. & B.Sc. Examination

(Pass Course)

ORGANIC CHEMISTRY

The growth and scope of Organic Chemistry.

Purification of Organic compounds (Solids and Liquids). Analysis of Organic compounds; Qualitative tests, quantitative estimation of carbon, hydrogen, nitrogen, halogens and sulphur. Determination of molecular weight of organic compounds, empirical and molecular formulas.

Constitution and Classification; Chemical constitution, linking of carbon atoms, classification of organic compounds, homologous series, nomenclature.

Aliphatic Hydrocarbons : Saturated : Paraffins up to and including 4 carbon atoms. The petroleum industry.

Unsaturated : Ethylene and acetylene.

Halogen derivatives of the Paraffins : Methyl and ethyl halides, reactions of alkyl halides, dihalogen derivatives—ethylene and ethylidene compounds, trihalogen derivatives of methane, carbon tetra chloride.

The alcohols : Preparations, properties and constitution of the alcohols, primary, secondary and tertiary alcohols, (up to 4 carbon atoms) fermentation, manufacture of methyl and ethyl alcohols.

The Ethers : Preparation, properties and constitution of the ethers, meta merism, ethylether.

Aldehydes and ketones, preparation, properties and constitution of aldehydes and ketones, formaldehyde, acetaldehyde, Paraldehyde, chloral, acetone, condensation, polymerisation.

The fatty acids : Preparation, properties and constitution of fatty acids, Formic acid, acetic acid, vinegar, propionic acid, butryic acid: Elementary ideas of oils, fats and waxes.

The acid chlorides, Anhydrides and amides.

Preparation of acetyl chloride, acetic anhydride and acetamide.

The esters—esters of organic acids, hydrolysis.

The amines : Primary, secondary and tertiary amines, quaternary ammonium compounds.

The Cyanogen Compounds : Cyanogen. hydrocyanic acid, nitriles, and isonitriles.

Organometallic compound of magnesium (not more than 3 applications of the reagent).

Derivatives of the unsaturated hydrocarbons : Allyl compounds, acrolein, acrylic acid.

The Polyhydric alcohols : The glycols, ethylene glycol, ethylene oxide, glycerol (including its constitution), glycerol trinitrate.

Carbohydrates : Nomenclature, Glucose, fructose, and their constitution. Properties and manufacture of cane sugar, starch, cellulose, nitrocellulose, (Configuration of the carbohydrates is omitted).

Stereochemistry : Optical and geometrical isomerism of lactic, tartaric, maleic and fumaric acids : their preparation, properties and constitution, Resolution of tartaric acids.

Dibasic and tribasic acids : Preparation and properties of Oxalic acid, malonic acid, succinic acid and citric acid (including constitution).

The simple synthetic uses of molenic ester and acetoacetic ester (not exceeding four uses).

Carbonyl chloride, urea.

The aromatic hydrocarbons : Kekule's theory and structure of benzene (excluding electronic structures), properties of aromatic compounds; distillation of coal tar. Benzene, toluene and xylenes, their reactions and properties, Friedel-Crafts reaction, Fittig's reaction, Korner's absolute method of orientation.

The Aromatic halogen compounds : Monohalogen substitution products; chlorobenzene, bromobenzene, iodobenzene, benzyl chloride. Benzal chloride, Benzo-trichloride and their properties.

The Aromatic nitro compounds mono-nitrobenzene, trinitrotoluene and their properties.

The Aromatic amines : Properties and preparation of the following amino compounds, aniline, methyl aniline, dimethyl aniline, toluidines, benzylamine and sulphanilic acid.

Preparation and Reactions of Diazo compounds (omitting constitution). Preparation and properties of Phenyl hydrazine and methyl orange.

The Sulphonic acids : Benzene sulphonic acids.

The Phenols : Preparation and properties of the phenols, mono-nitrophenol, picric acid and anisole.

Aromatic alcohols, aldehydes and ketones : Benzyl alcohol, aromatic aldehyde-Benzaldehyde, aromatic ketones-acetophenone, benzo-phenone.

Phenolic aldehyde—Salicylaldehyde (Reimer-Tiemann reaction).

Aromatic Acids : Benzoic Acid, Benzoic anhydride, benzamide, benzoic esters, phenyl acetic acids, Cinnamic acid, Salicylic acid, acetyl salicylic acid.

PHYSICAL CHEMISTRY

In addition to a fuller treatment of the subjects prescribed for the I.A. and I.Sc. course, the following :—

Atomic theory, simple conception of atomic structure (including atomic number and isotopes), and electronic theory of valency (in outline), periodic classification of the elements. The kinetic theory of gases; deviations from gas laws, specific heats and ratio of specific heats, vander Waal's equation of state, continuity of state, the principle of corresponding states. The liquefaction of gases (elementary treatment). General properties of solutions : osmosis, osmotic pressure, molecular weight of dissolved substances, determination of lowering of vapour pressure, determination of relation between vapour pressure and osmotic pressure, ideal solutions, static and dynamic methods of measuring vapour pressures, elevation of boiling point, laws of elevation of boiling point, depression of freezing points, limitation of the methods for the determination of molecular weights in solution, abnormal molecular weights.

Elements of thermochemistry : Hess's law of constant heat summation.

Chemical equilibrium : reversible and irreversible reactions, law of mass action, equilibrium in homogeneous systems; verification of the mass action. Le Chateliers' Theorem, homogeneous equilibrium in liquids, equilibrium in heterogeneous systems—phase rule as applied to one component system.

Elementary ideas of chemical kinetics : order of reaction, determination of the order of a reaction—saponification of ethyl acetate.

Elementary knowledge of homogeneous and heterogeneous catalysis, autocatalysis, catalysis by enzymes, catalyst poisons, mechanism of catalytic reactions (elementary treatment).

Electrolysis and electrolytic dissociation; Electrolysis—Faraday's laws, Arrhenium theory of electrolytic dissociation, specific, equivalent and molar conductivity, measurement of conductivity of solutions, Transport number, Kohlrausch's law, strong and weak electrolytes, degree of dissociation—Ostawalds' law of dilution, solubility product and its application in analytical chemistry, abnormality of strong electrolytes (theory of Del—Hukel—Onsagar is not to be taught). Strength of acids and bases—determination of strength of acids and bases, ionisation of water—ionic product of water, hydrolysis of salts, neutralisation, hydrogen ion concentration—PH, determination of PH, buffer solution, indicators—theory of indicators (elementary treatment).

The colloidal state : crystalloids and colloids, classification of the colloids peptisation, lyophobic and lyophillic colloids, preparation of colloidal suspensions, Brownian movement, cataphoresis, coagulation of colloidal solutions and optical properties of colloidal solutions, protective colloids—gold number.

INORGANIC CHEMISTRY

Theoretical

1. Atomic theory; simple conception of atomic structure, atomic number, isotope (elementary idea, omitting separation); valency (elementary conception of electro-valency, co-valency, co-ordination valency); periodic classification of the elements.

2. Double and complex salts, Werner's theory (elementary ideas, excluding space-configuration and isomerism).

3. Methods of determination of equivalent weight, and atomic weight (including accurate determination of atomic weight—Stas' method)—Richard's method.

4. Application of law of mass action in analytical practices and industrial processes.

5. Study of the following elements and their chief compounds :

Note.—(*a*) Large-scale preparations, and winning of metals are included omitting technological and metallurgical details.

(*b*) Chief compounds comprise; Hydrides, halides, oxides and oxy-acids of non-metals, and hydrides, halides, oxides, hydroxides, sulphides, sulphates, nitrates and carbonates of metals.

(*c*) In addition to a fuller treatment of the subjects for the Intermediate course, specified topics are also to be studied.

Helium, neon, argon, krypton and xenon (history of discovery of argon and helium, isolation, atomic weight, place in the periodic table).

Oxygen, hydrogen, nitrogen (including water, air, hydrogen peroxide and ozone). Deuterium and its oxide (elementary study), Manufacture of ammonia and nitric acid. Hydrazine, Hydrazoic acid, hydroxylamine, nitrous and hyponitrous and (structure omitted.)

Flourine, chlorine, bromine, iodine and their hydrides (comparative study of properties). Oxides and oxy-acids of chlorine.

Sulphur, sulphurous and thiosulphuric acids (preparation and reactions), Sulphuric and (including physico-chemical principles of manufacture, but excluding theory of formation of chamber crystals).

Boron and silicon (omitting constitution of their hydrides, and of silicates) Glass.

Carbon. Coal gas; producer gas and water-gas (elementary) Carbides of silicon and calcium.

Phosphorus, arsenic.

Lithium, sodium, potassium, ammonium, copper, silver, gold, Calcium, strontium, barium, magnesium, zinc, cadmium, mercury, aluminium, tin, lead, antimony, bismuth, chromium, manganese, iron, cobalt and nickel.

Note.—Teaching should aim at correlation of properties on the basis of periodic classification. Simple valency bond structures of oxides and oxy-acids, and electronic structure of simple compounds (excluding resonance) are included.

Paper I—Organic and Physical, Paper II—Inorganic and Physical questions are to be so grouped that marks may be distributed uniformly as far as possible among the three subjects.

Practical

Qualitative analysis of inorganic mixtures containing not more than three radicals from the following lists :—

Silver, lead, mercury, bismuth, copper, cadmium, arsenic, antimony, tin, iron, aluminium, chromium, zinc, manganese, cobalt, nickel calcium, strontium, barium, magnesium, sodium, potassium and ammonium, and their oxides, hydroxides, chlorides, bromides, iodides, fluorides, sulphates, sulphides, sulphites, thiosulphates, chromates, carbonates, phosphates, nitrites, nitrates and borates.

2. Detection of elements and detection of any one of the following groups in organic compounds :

$$NH_2,\ NO_2,\ OH,\ CO,\ COOH \text{ and } COOC_2H_5$$

3. Acidimetry and alkalimetry, oxidation and reduction methods of volumetric analysis with potassium permanganate and potassium dichromate; idometry, gravimetric estimation of silver, iron and sulphate.

Distribution of Marks in the B.Sc. Pass Practical Examination.

Inorganic qualitative	30
Organic qualitative	20
Inorganic quantitative	30
Viva and Record	20
Total ...	100

Practical Note Books signed at regular intervals by the teachers are to be submitted; otherwise the candidate may be debarred from the examination.

Honours Course

PAPER—I

In addition to the topics for the pass course, the following should be studied :—

A detailed study of the following sections of organic chemistry is required.

Aliphatic compounds : Hydrocarbons : Saturated hydrocarbons up to five carbon atoms, petroleum—its cracking, simpler alicyclic hydrocarbons.

Unsaturated hydrocarbons : olefines, acetlenes, diolefines.

Halogen derivatives of hydrocarbons.

Alcohols : methyl, ethyl, propyl, butyl and amyl alcohols, theories of fermentation, allylalcohol.

Fuller treatment of Polyhydric alcohols—glycols, glycerol.

Aldehydes and ketones; unsaturated aldehydes and ketones, *e.g.*, acrolein, crotonic aldehyde, mesityl oxide and phorone.

Hydroxyaldehydes : Glycolic aldehyde—Preparation and Properties. Dialdehydes : Glyoxal—its preparation and properties. Diketones, Diacetyl, acetyl acetone and acetonyl acetone—their preparation and Synthetic uses.

Monocarboxylic acids and Dicarboxylic acids including glutaric, adipic, pimelic and suberic acids.

Stereochemistry : Optical and geometrical isomerism (in details) Walden inversion.

Halogen substituted acids; Mono—, di—, and trichloro acetic acids Hydroxy acids : Malic, Keto acids, pyruvic, acetoacetic and levulinic acids.

Amino acids : Glycine, alanine.

Elementary ideas about proteins.

Constitution of Cyanides, isocyanides, preparation and uses of diazomethane and guanidine.

Organometallic compounds of zinc and magnesium.

Thio alcohols, thio ethers, sulphoxides and sulphones, thioures, thiocyanic acid.

Carbohydrates—monosachharides—configuration of the monosaccharides Synthetic methods in the chemistry of monosaccharides, detection of sugars. Disaccharides—sucrose, lactose, maltose (proof of structure not required).

Benzene and its homologues.

Structure of benzene—with the concept of resonance.

Diphenyl methane, triphenylmethane and free radicals, naphthalene, anthracene.

Halogen derivatives, sulphonic acids and nitro derivatives of aromatic hydrocarbons, preparation and constitution of naphthalene and anthracene.

Aromatic alcohols, phenols, ethers and naphthols, alizarin and quinazarin.

Aromatic amines, diazo and azo compounds, azo dyes and naphthyl amines.

Aromatic aldehydes, ketones and quinones—amines and anthra-quinones.

Aromatic monocarboxylic acids and their derivatives; halo, nitro, amino—and hydroxy substituted aromatic acids, phthalic acids and their derivatives and coumarin.

Preparation and properties of pyridine, quinoline, isoquinoline, indole. Preparation, constitution and uses of indigo.

Syntheses and uses of the following : Malachite green, Fluorescein, magenta, alizarin, eosin and phenolphthalein.

In addition to the reactions which are necessary for the preparation of the above compounds elementary study of the following reactions with two examples in each case :

1. Reformatsky's reaction.
2. Knoevenagel reaction.
3. Michael reaction.
4. Hoesch's reaction.
5. Gatterman's reaction.

The student should be capable of devising possible syntheses of compounds (not necessarily mentioned in the text books) involving above reactions.

Detection of the following (omitting estimation) groups :—

—OH, NH, NHR, NO_2, COOH, CO_2Et, CHO, CO,—CN, R—O—R,

PAPER II

1. Radio-activity, Structure of the atom.

Elementary idea of Nuclear constitution; atomic number, isotope. Artificial transmutation, artificial radio activity, simple concept of nuclear fission.

Valency; electronic theory of valency, electro-valency, co-valency, metallic bond, co-ordination valency.

Complexes—perfect and imperfect; Werner's theory, (including space configuration and isomerism of inorganic complexes, inner metallic complexes).

2. Modern methods of determination of atomic and molecular weights.

3. Study of the following elements and their principal compounds—Selenium, tellurium, caesium, rubidium, radium uranium and platinum.

4. Fuller treatment of the elements and their compounds in the pass syllabus, including the following topics :—

Compounds of inert gases, Forms of hydrogen. Hydrides, Oxides. Peracids and persalts (e.g. of boron, carbon, sulphur and chromium). Nitrides, Amides and acid amides (of sulphur, phosphorous, nitrogen and carbon) Calgon, Oxides and oxyacids of chlorine, bromine and iodine. Chlorides, sulphides, carbides, carbonyls. Reactions in liquid ammonia and liquid sulphur dioxide.

Abnormal valency compounds of metals (only those included in the course need be treated).

Binary alloys, amalgams.

Electronic concept of oxidation and reduction.

Application of Red-ox potentials to the field of inorganic chemistry.

Indicators—choice of indicators—pH and pK values. The teaching should aim at correlation of properties of Elements on the basis of the periodic table, atomic structure, atomic and ionic volumes.

Paper III

Detailed treatment of the tropics included in the Pass course syllabus, to which the following are specially added :—

(*i*) Gases :—Kinetic theory of gases, ideal gas equation, and derivations of the same; Maxwell's distribution of velocities (without derivation), Collision number.

Equations of state—Van der Waal's, Dieterici and Berthellot's equations and their limitations.

Critical states—Equation of corresponding states. Specific heats and Viscosity of gases.

Determination of molecular weights of gases—limiting densities—dissociation.

Principles of liquefaction.

(*ii*) Liquids :—Molar volumes—Surface tension—association of liquids—Parachor Viscosity of Liquids—elementary ideas of molar refractive index and dipole moment.

(*iii*) Solids : Specific heat of solids, isomorphism, elements of crystal structure. Bragg's analysis of NaCl and KCl.

(*iv*) Energetics: Elementary treatment of First and Second laws of thermodynamics. Carnot's cycle & Carnot theorem. Kelvin scale of temperature, specific heat relations—thermo-chemistry. Joule-Thomson effect. Kirchoff's equation, Calusius—Clapeyron equation, Gibb's—Helmoholtz equation. Concepts of entropy, free-energy-Gibb's potential and their simple relations.

Application of thermodynamic principles to simpler problems in solutions chemical equilibrium, E.M.F. of cells, etc.

(*v*) Dilute solutions: Osmotic pressure, lowering of vapour pressure and freezing points, elevation of boiling points and their relations. Determination of molecular weights from the above.

(*vi*) Collodial State : Colloids—Classification and general methods of preparation, dialysis. Special properties of colloids. Explanation of colloidal charges and mechanism of coagulation.

Brownian motion.

Determination of Avogadro number—from Brownian movement, from electronic charge from radioactivity.

(*vii*) Equilibrium: Law of mass action and its application to homogeneous reactions. Methods of determination of the equilibrium constant. Heterogeneous reactions. Vant Hoff isotherm and isochore—Le Chatelier principle.

(*viii*) Catalysis: Catalytic reactions—classification—criteria of catalysed reaction—application to industrial process.

Theories of catalysis—Theory of adsorption—Langmuir & Frensolisch isotherms: Special types of catalysis—enzyme catalysis, acid-base catalysis.

(*ix*) Chemical Kinetics: Order of reaction—equations of Zero, first and second order reactions, Methods of the determination of the order. Arrhenius equation and mechanism of chemical changes. Autocatalytic and induced reactions.

Simple side—Consequtine reactions.

Elementary ideas of photochemistry: Beer's and Lambert's Law, Einstein's Law. Molar extinction co-efficient. Photosensitisation—chain reaction. H_2—Br_2 reaction.

(*x*) Phase rule: Phase rule equation: Hernst distribution law. Application of phase rule to the following systems.

(*i*) (*a*) water (*b*) sulphur (*c*) Carbon dioxide

(*ii*) equeous solutions of KCl, Na_2SO_4, and $FeCl_3$

(*iii*) Alloy system, *e.g.*, Tin and Lead, Silver and Copper.

(*iv*) Miscibility and distillation of binary liquid mixtures.

(*v*) Thermal analysis of two component systems stated above.

(*vi*) Electrochemistry: Theories of electrolytic dissociation—Faraday's laws.

Determination of transport number and conductance of solutions.

Strong and weak electrolytes—Qualitative treatment of Debye-Huckel theory.

Kohlrausch's Law.

Determination of velocity of ions.

Application of conductance measurements.

Ostwald dilution Law—strength of acids and bases—solubility product-hydrolysis—ionic product of water—modern concept of acids and bases.

Theory of indicators (neutralisation).

Hydration of ions (treated qualitatively).

(*vii*) Electromotive force: Electrode potentials, electromotive series E.M.F., of cells.

Concentration cells, galvanic cells, Daniel cell, Weston cell, Leed and alkali accumulators.

Application of Gibb's—Helmholtz equation.

Redox potential—Oxidation-reduction series—Fe^{++} -Fe^{+++}, $Hg^{+}-Hg.^{+}$ quinhydrone.

Application of E.M.F., meausements

Buffer solutions—determination of pH.

Decomposition potential—polarisation and overvoltage.

(*viii*) Radioactivity Atomic structure—Elementary ideas, radioactive radiation, disintrigation theory of Rutherford, Sody's Law.

Uranium series only.

Uses of spectroscopic methods in Chemistry.

Paper IV

History of Chemistry—Lives and short accounts of the work of the following chemists:—

Emil Fischer, Kekule, Lavoisier, Mendeleeff, Arrhenius, Pastu, Van Heff add P. C. Ray.

Water—for industrial and domestic purposes.

Fuels—Wood, charcoal, coal, coke, oil, natural gas, coal gas, waster gas and producer gas.

Industrial gases—hydrogen, oxygen, nitrogen, carbon dioxide, dry ice, recovery of sulphur dioxide from waste gases, acetylene and its industrial uses.

Industrial carbon, lampblack, carbon black, activated carbon, graphite-natural and synthetic.

Fertilizers—Potassium salts, cynamide, synthetic ammonia, ammonium salts, urea, sodium nitrate, phosphatic fertiliser.

Sodium and its compounds of industrial use.

Electro-chemical and electro-thermal industries :—aluminium, magnesium, potassium chlorate and perchlorate, calcium carbide, artificial abrasives.

Sulphur industries—mining and refining, recovery of sulphur from waste gases.

Sulphuric acid—Chamber and different contact process and also from gypsum; sulphur problem in India.

Nitric acid—Synthetic, from sodium nitrate, salt cake and its disposal for useful purposes.

Chlorine—hydrochloric acid from salt and synthetic, hypochlorities, the problem of chlorine utilisation, liquid chlorine and its industrial uses.

Paints and inorganic pigments:—Zinc white, white lead, lead Chromate, red lead, rouge, chromegreen and Ultramarine.

General knowledge—Oils, fats and waxes—Vegetable oils, animal oils, and fats, waxes, hydrogenation of oils, soap for laundry and industrial purposes, recovery of glycerine.

Sugar and starch industries—Manufacture of cane sugar, utilisation of molasses and bagasse; manufacture of starch from different sources.

Fermentation industries—Industrial alcohol from different raw materials; acetone and butyl alcohol; vinegar, citric and lactic acids.

Wood chemicals—Distillation of wood, recovery of by-products.

Synthetic production of methanol, farmaldehyde and acetone.

Elementary ideas on Synthetic Fibre, Synthetic plastics and Synthetic rubber.

Petroleum industry—Constituents of crude oil and natural gasses, distillation of crudes, cracking, refining of petroleum, high-octane petroleums, antiknock compounds.

Preparation of Fuchsine, indigo, alizarine, and Bismark brown—and principles of Dyeing.

Metallurgy—iron, copper, lead, zinc, tin, aluminium, magnesium, nickel, gold, silver, (excluding engineering details), manufacture of steel by different processes, alloy steels, binary non-ferrous alloys.

Application of:—Law of mass action; Red-ox potentials-overvoltage; concepts of acids, bases and their relative forces in analytical chemistry.

(*Practical*)

INORGANIC CHEMISTRY

Qualitative: Analysis of mixtures containing not more than four radicals basic or acidic, selected from the list included in the pass syllabus and the following: ferre and ferricyanide, chlorate, bromate, iodate, sulphocyanide, arsenate hypophoshite and silicate.

Semi-micro methods should be introduced in qualitative analysis.

Quantitative:—(*a*) Volumetric analysis—as in the pass syllabus, with the addition of argentometric method.

(*b*) Gravimetric estimations of silver, lead, iron, zinc, manganese, barium, calcium, magnesium, chloride and sulphate.

Gravimetric experiments should be done in Gooch or sintered crucibles.

(*c*) Estimations of mixtures of iron and calcium, iron and copper, iron and manganese, copper and zinc, silver and copper, calcium and barium, calcium and lead, calcium and magnesium.

Physical

1. Molecular weights by Victor Meyer's method.
2. Density, surface tension of liquids by drop method.
3. Viscosity by Ostwald's viscometer.
4. Partition co-efficient of iodine between water and benzine.
5. Study of equilibrium of the system.

$$KI + I_2 \rightleftarrows KI_3$$

by (*a*) solubility method;
(*b*) partition co-efficient method.

6. Adsorption of acetic acid by charcoal.

7. Preparation of a buffer solution—acetic acid and acetate—by determination of pH by indicator.

Organic

1. General reactions and tests of the following organic compounds given singly in pure condition :—

1. Methyl alcohol
2. Ethyl alcohol
3. Glycerine
4. Chloroform
5. Acetaldehyde
6. Benzaldehyde
7. Acetone
8. Glucose
9. Cane Sugar
10. Lactose
11. Starch
12. Formic acid
13. Acetic acid
14. Oxalic acid
15. Succinic acid
16. Citric acid
17. Tartaric acid
18. Benzoic acid
19. Salicylic acid
20. Phenol
21. Resorcinol
22. Aniline
23. Methyl aniline
24. Dimethyl aniline
25. Urea

bgkqj vbgkqj—

2. Examination of a solid organic compound in respect of the following points :—

(*i*) Detection of the elements (N, Cl, Br, I, S) in the given substance.

(*ii*) Determination of the m.p. of the substance.

(*iii*) Detection of any one of the functional groups present; such as, Carbonyl-Carboxyl-, Hydroxyl-, Nitro-, Amino-, Unsaturation, Amido-, Anilido-Carboalkoxy-.

(*iv*) Preparation of a derivative.

3. Preparation of at least six simple organic substances from amongst the following :—

(*i*) Ethyl bromide
(*ii*) Iodoform
(*iii*) Ethyl acetate
(*iv*) Pthalimide
(*v*) Aceticanhydride
(*vi*) Nitrobenzene
(*vii*) Bromobenzene
(*viii*) m-Dinitrobenzene
(*ix*) Acetanilide
(*x*) Aniline
(*xi*) p-Nitraniline
(*xii*) Picric acid
(*xiii*) Pthalic anhydride
(*xiv*) Cinnamic acid
(*xv*) Benzyl alcohol (from benzaldehyde).
(*xvi*) Benzaldehyde
(*xvii*) Benzoic acid (from toluene)
(*xviii*) Anthraquinone
(*xix*) Benzalacetophenone
(*xx*) Methyl orange.

The total of marks in the practical examination be distributed as follows :—

(1) Inorganic qualitative		 50
(2) Inorganic quantitative		 50
(3) Organic preparation		 25
(4) Organic detection—		
(*a*) General	... 10	
(*b*) Solid	... 20	
(5) Physical Chemistry		 25
(6) Oral and records		 20
Total		... 200

Practical Note Books signed at intervals by the teachers are to be submitted; otherwise the candidate may be debarred from examination.

CENTRAL BOARD OF SECONDARY EDUCATION, AJMER.

The under mentioned candidates had resorted to unfair means at the Intermediate Examination of 1959. Their present examination has therefore been cancelled and they have further been debarred from appearing at the Intermediate Examination of the Board in 1960.

Roll No. and name of Exam	Name of candidate	Father's name	Place of residence	Years for which debarred
46 Inter. Sc.	Jiwan Lal Agrawal	Ramvishal Agrawal	Satna	Inter. Exam. of 1959 cancelled and debarred from the Inter. Exam. of 1960,
519 Inter. Arts	Girdhar Gopal Gupta	Ganesh Prasad	Jodhpur	Do.
849 ,, ,,	Jagdish Rai	Mangal Sain	Ajmer	Do.
899 ,, ,,	James Simon Samuel	Harry Samuel	Abu Road	Do.
1843 ,, ,,	Ram Swaroop Tosniwal	Mangilal Tosniwal	Shahpura	Do.
3809 ,, ,,	Prem Bahadur Saxena	Raghunath Sahai Saxena	Delhi	Do.
4135 ,, ,,	Sana Harinadha Swamy	S. Ch. Satyanarayanrao	Tekkali	Do.
4562 ,, ,,	Mrs. Savitri Devi Gupta	Gauri Shanker Agrawal	Nasirabad	Do.
4952 ,, ,,	Priya Ranjan Sen Gupta	Kali Kinker Sen Gupta	Rewa	Do.
5333 ,, ,,	Dhirendra Chandra Bose	Kali Pada Bose	Satna	Do.
5519 ,, ,,	Prahlad Singh Namdeo	Raja Ram Namdeo	Jabalpur	Do.
5555 ,, ,,	Ramavatar Chaturvedi	Jagannath Pd. Chaturvedi	Satna	Do
7831 ,, ,,	Rashid Ahmad	Abu Ahmad	Bhopal	Do.
7852 ,, ,,	Ravi Shanker Tiwari	Murlidhar Tiwari	Bhopal	Do.

(S. A. Haider).
Secretary.

AGRA UNIVERSITY

Notification No. CF 4 of 1959

I. It is hereby notified that the Examinations of 1959 of the following candidates have been cancelled and they have further been debarred from appearing at any Examination of the University in the year 1960, as they used or attempted to use unfairmeans during the University Examination of 1959.

Senate House, Agra,
July 1, 1959.

R. S. Agarwal,
Acting Registrar.

B.A. PART I.

R. No.	Enrol. No.	Name of candidate	College or Centre.
2557	A587175	Jagdish Saran Agrawal	Bareilly College, Bareilly
2821	A587284	Rajiv Lochan Dwivedi	Do.
3466	A584839	Jagdish Prasad	D.A.V. Col. Bulandshahr
5411	A5711510	Lalta Tiwari	Teacher, Varanasi K. N. Govt. Col. Gyanpur Centre
6029	A5812682	Jagdish Singh Rathore	Ch. Ch. College, Kanpur
6322	A58347	Ashwini Kumar Tripathi	D.A.V. College, Kanpur
6349	A58370	Balbir Singh	Do.
6442	A58442	Daya Narain Dubey	Do.
6528	A58522	Indra Pal Singh Chauhan	Do.
6581	A576339	(Km) Kamal Devi	Do.
6749	A58709	Om Prakash Srivastava	Do.
6831	A58788	Raj Bahadur Singh	Do.

6885	A58839	Ram Chandra Gupta	Do.
6993	A58932	Salig Ram Pathak	Do.
7097	A581022	Shyam Behari Pathak	Do
7237	A581147	Vishnu Dayal	Do
9137	A562540	Dharampal Singh	Ex. St. N.R.E.C. College, Khurja
9153	A578720	Ramesh Chandra	Do.
9164	A578763	Vishan Swarup Sharma	Do.
10080	A5810070	Chaman Singh Verma	Meerut Col. Meerut
11227	A585775	Suresh Chand Sharma	KB. Mahavidyalaya, Mirzapur
11877	A583006	Virendra Kumar Jain	KGK. College. Moradabad
11882	A583009	Vishnu Nath	Do.
11914	A5714744	Jitendra Singh (Primus)	R.S.M.Deg. Col. Dhampur (KGK. Col. Moradabad) Centre.
11959	A589922	Surendra Kumar Agrawal	Do.
12152	A5710188	Brahma Singh Verma	S.D.Col. Muzaffarnagar
12719	A588083	(Kr) Kishore Singh Guyar	D.V. College, Orai

B.A. PART—II

228	A57336	Yogeshwar Nath Tripathi	Agra College, Agra
292	A5611042	Mahendra Kumar Kulshreshtha	St. BR. Col. Agra (Centre Agra College).
318	A572165	Raghubir Singh Bhagaur	Do.
701	A5318148	Jagdish Chandra Paliwal	(A.K. College Shikohabad Ex. St.) Agra Col. Agra Centre
1721	A5615167	(Km) Pushpa Gupta	Woman—T. R. Kanya Mahavidyalaya, Aligarh Centre
2934	A574367	(Km) Krishna Kumari Gupta	DAV. Col. Dehradun.
2943	A574875	(Km) Lakshmi Srivastava	Do.
4213	A5412153	(Km) Qazia Tahira Khatoon	Woman—MMH. Col. Ghaziabad, Centre
4217	A5414690	(Smt) Satgur Peari Agrawal	Woman Do.
4886	A57895	Ram Sewak Singh	Bundelkhand College, Jhansi
6156	A5611504	Brijendra Kishore	Ex. St D.A.V. Col. Kanpur Centre
6178	A549513	Girdharilal Srivastava	Do.
6188	A5611686	Jagdish Prasad Nigam	Do.
6253	A555110	Raghubir Singh Saluja	Ex. St. D.A.V. Col. Kanpur Centre
6423	A5587	Sharda Sharan Kulshreshtha	Ex. St. St. John College, Agra, D.A.V. College Kanpur Centre
6626	A5315273	Devi Shanker Tripathi	Do.
6678	A537912	Pramod Kumar Shukla	Do.
7330	A579624	Ayodhya Prasad Sharma	V.S.S.D. Col. Kanpur
7677	A568659	Ram Singh (Princes)	N.R.E.C. Col. Khurja
8060	A573417	Mahendra Singh	K.V. College. Machhra
8207	A561292	Nem Singh	K.R. Deg. Col. Mathura
8[illegible]40	A579047	Ramesh Chandra Patni	Do.
8473	A5214291	Anand Mohan Saxena	Teacher, Etab. K.R. Deg. Col. Mathura Centre
9642	A5620052	(Km) Chandravati Shrotriya	Woman G.D. College, Moradabad Centre
9945	A563928	Suresh Chandra	KGK. College, Moradabad

B.Sc. PART—I.

30	A588983	Bishambher Lal Kalucha	St. Agra College, Centre Senate House Agra
81	A589006	Har Mahendra Singh	Do.
91	A589176	Jagdish Chandra Magon	Do.
1316	A583551	Bikram Singh Rana	DAV. Col, Dehradun
1463	A575107	Narinder Singh Sawhney	Do.
1632	A575190	(Km) Anandi Jadli	Ex. St. Do.
1761	A574587	Narain Das Kapur	M.M.H. Col. Ghaziabad
2309	A581257	Durga Prasad Trivedi	DAV. College, Kanpur
2450	A531347	Mahesh Chandra Gupta	Do.
2489	A577167	Murari Lal Dheer	Do.
2499	A581618	Narendra Kumar Sharma	Do.
3044	A586978	Roop Chandra	NREC. Col. Khurja
3070	A578769	Bhuvnarendra Chandra Gupta	Ex. St. Do.
4065	A582061	Narendra Kumar	Hindu College, Moradabad
4592	A5811098	Bhagirath Singh	Govt. Raza Col. Rampur

B.Sc. PART--II

541	A5610685	Irshad Ahmad	Bareilly College, Bareilly
702	A573595	Ramesh Chandra Sharma	SM. College, Chandausi
1240	A577075	Gyaneshwar Dayal Tiwari	DAV. Col. Kanpur.
1394	A549299	Satya Deo Saran Bhargava	Do.
1544	A555946	Ram Mohan Shukla	Do.
1754	A545405	Rambir Sharma	Ex. St. NREC. College, Khurja
2184	A525227	Prem Prakash Gupta	Ex. St. Hindu College, Moradabad

B.COM. PART—I

395	A588045	Uma Shanker Sharma	St. P. C. Bagla Col. Hathras Centre B.S. College, Aligarh
1046	A581771	Manjit Singh	DAV. College, Kanpur
1387	A577594	Ramesh Chandra Misra	Ex. St. Do.
1769	A579149	Jagdish Chandra Gupta	KRD. College. Mathura

B.COM. PART—II

187	A57627	Bhagwati Prasad Sharma	REI. Dayalbagh Agra
258	A575957	Devi Shanker	B.S. College, Aligarh
278	A575979	Mahendra Bhushan	Do.
456	A556443	Newal Kishore Tandon	Ex. St. Bareilly College, Bareilly
609	A574656	Charan Dass Verma	M.M.H. Col. Ghaziabad
882	A577472	Jagdish Narain Gupta	D.A.V. College, Kanpur
958	A548862	Mohd. Athar Siddiqui	Do.
1024	A577593	Ramesh Chandra Gupta	Do.
1491	A56733	Girja Prasad Chaube	Ex. St. VSSD. Col. Kanpur

B.Sc. (Ag) Part—I

248	A5713236	Chobal Singh Khokhar	Ex. St. J. V. College, Baraut.

M.Com. Final

245	A556546	Ram Rakhan Kureel	DAV. College, Kanpur

M.Sc. (Ag) Previous.

64	A5516479	Kapil Deo Singh	Govt. Agric. Col. Kanpur

Third B. Sc. (Engg)

68	A5514990	Kanwar Sukhdarshan Singh Aul	Engg. College, Dayalbagh-Agra

M.A. (Previous)

699	A555088	Prem Nath Tripathi	D. A. V. College, Kanpur
2284	A5611982	Raghunath Singh	—do—
2841	A501716	Sukhbir Singh Thakur	S. D. College, Muzaffarnagar, Centre and Teacher, Muzaffarnagar.

LL.B. (Previous)

871	A5812255	Anand Kumar Bakaya	MMH. Col. Ghaziabad.
967	A559385	Swatantra Prakaash Agrawal	—do—
980	A5713202	Gautam Rishi Vasdeo	Ex. St. —do—
1043	A5815592	Atiq Ahmad	St. Dayanand Col. of Law, Kanpur DAV. College, Kanpur Centre
1171	A549589	Jaswant Rai Dave	—do—
1199	A583019	Krishna Kumar Lal	—do—
1250	A583021	Niamat Ullah Khan	—do—
1489	A556268	Gur Prasad Srivastava	—do—
1492	A5312423	Hari Shanker Agrawal	—do—
1766	16493	B. N. Katiyar	Ex. St. VSSD. Col. Kanpur
2336	A5713670	Rajendra Kumar Sharma	Ex. Student, KGK. Col. Moradabad Centre,

LL.B. Final

25	A518172	Jagdish Prasad Jain	Agra College, Agra.
353	A548583	Amar Nath Sharma	Dayanand Col. of Law, Kanpur
432	A5516075	Radhey Shyam Sharma	—do—
686	A559796	Ram Krishna	Meerut College, Meerut
755	A5212141	Prem Narayan Prem	KGK. Col. Moradabad

II. The Examinations of the following candidates have been cancelled for 1959 as they used or attempted to use unfairmeans at the Examinations of 1959.

B.A. Part—I

258	A5815626	Ravendra Swarup Shivahare	Agra College, Agra
11701	A582864	Krishna Pal Gupta	KGK. College, Moradabad

B.A. Part—II

4989	A5712999	Gopi Lal Sharma	Teacher Bundelkhand College, Jhansi Centre.

B.Sc. Part—II

516	A549332	Surendra Singh	Jat Vedic College, Baraut
1691	A451221	Ramesh Prasad Saksena	D. A. V. College, Kanpur Centre Ex. Student Bareilly College, Bareilly

B.Com. Part—II

1001	A577574	Rajendra Bhalla	D. A. V. College, Kanpur

B.Sc. (Ag) Part—I

386	A5711087	Yogeshwar Sharma	Govt. Agric. Col. Kanpur

B.Sc. (Ag) Part—II

6	A572394	Bhuteshwar Singh	B. R. College, Agra
71	A5513012	Umesh Kumar	Ex. St. —do—

M.Sc. (Ag) Previous

142	A5813310	Tahal Ram Sakhani	Govt. Agric. Col. Kanpur

LL.B. Previous

1451	A49532	Ayodhya Prasad Tewari	Ex. St. D. A. V. College, Kanpur
1460	A558792	Bhawani Prasad	—do—

LL.B. (Final)

80	A55211	Subhash Chandra Jain	Agra College, Agra
431	A5715152	Radhey Pati Tripathi	D. A. V Col. of Law, Kanpur DAV. Col. Kanpur Centre
491	A525340	Brahma Deva Tripathi	Ex. St. —do—

III. The Examinations of the following candidates have been cancelled for 1959 and they have further been debarred from appearing at any examination of the University during the years 1960 and 1961.

B.Sc. Part—I

3377	A5810517	Krishna Kumar Sharma	Meerut College, Meerut

B.Sc. Part—II

1499	A555756	Jawahar Lal Bhatia	D. A. V. Col. Kanpur
1640	A5215904	Yash Pal Malhotra	—do—

The cases of the following five candidates are under consideration of the University and the decision taken there on will be announced later on :—

B.A. Part—I

R. No. 2798	A597265	Prem Prakash Seksena. (Previous)
,, 6543	A59533	Jagdish Narain Shivhare
,, 7409	A576692	Santosh Chandra Nigam

B.A. Part—II

R. No. 6849	A509363	Suresh Chandra Upadhayaya, Teacher, Ex. St. D. A. V. Col., Kanpur.
,, 6304	A555305	Rudra Nath Pandey.

Sd./
Illegible,
Asstt. Registrar (Conf.)
For Registrar.

The 2nd July, 1959.

AGRA UNIVERSITY

Notification No. CF 61, 1959

In partial modification of this office Notification No. CF 4 of 1959 dated July 1, 1959, regarding the candidates found *using unfairmeans* during the University Examinations of 1959, it is hereby notified that Shri Jawahar Lal Bhatia, a candidate for the B. Sc. Part II Examination 1959 R. No. 1499 Enrolment No. A555756 of D. A. V. College, Kanpur who was debarred from appearing at any Examination of the University before 1962 has now been permitted to appear at an Examination of the University in 1961, if otherwise eligible.

Senate House,
Agra
Dec. 24, 1959

M. Ray,
D. Sc., F. N. I.,
Registrar

AGRA UNIVERSITY

Notification No. CF 14 of 1959

It is hereby notified that the examinations of 1959 of the following candidates have been cancelled and they have further been debarred from appearing at any examination of the University in the year 1960, as they used or attempted to use unfairmeans during the University examination of 1959 :

B.A. Part—I

R. No.	Enrol. No.	Name.	College or centre
2798	A587265	Prem Prakash Saxena	Bareilly College, Bareilly
6543	A58533	Jagdish Narain Shivabare	D. A. V. College, Kanpur
7409	A576692	Santosh Chandra Nigam.	Ex. St. —do—

B.A. Part—II

R. No.	Enrol. No.	Name.	College or centre
6304	A555305	Rudra Nath Pandey	Ex. St. D. A. V. College, Kanpur
6849	A509363	Suresh Chandra Upadhayaya	Teacher.

Senate House,
Agra
July 14, 1959

R. S. Agarwal,
Actg. Registrar

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